

Tasmanian Year Book



1972

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TASMANIAN YEAR BOOK

1972



Quiet Bay, Cape Bruny Light and Cloudy Bay, Bruny Island.

(Dept of Film Production)

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS
TASMANIAN OFFICE



TASMANIAN

YEAR BOOK

No. 6 : 1972

R. LAKIN

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AND GOVERNMENT STATISTICIAN OF TASMANIA**

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PREFACE

This is the sixth issue of the *Tasmanian Year Book*, the first appearing in 1967.

While the general content or style of the Year Book has not been affected there has been some rearrangement of material in this issue, and a consequent increase in the number of chapters from twelve to sixteen, to allow a more comprehensive coverage of some facets of the State.

The Year Book is designed to present a comprehensive statistical and descriptive account of the physical environment and of the social, demographic, economic, etc. structure of the State with particular emphasis on change and development in more recent years.

The first two Year Books featured a great deal of historical material, but in subsequent issues this has been reduced and greater emphasis placed on expanding the contemporary record. Special historical articles dealing with the early administration of Tasmania and on other matters of general interest will, however, continue to appear. In this issue articles have been included on the administration of two early lieutenant-governors, Colonel Thomas Davey (1813-1817) and Colonel William Sorell (1817-1824).

Other special articles included in this issue feature some of the State's major industries, the fauna of south-western Tasmania, endemic birds and sea stars, two recently created State instrumentalities (the Consumers Protection Council and the Tourist Development Authority) and the Morris Miller Library (University of Tasmania).

An index of all special articles which have so far appeared in the Year Book is included with the general index.

As far as possible the latest available statistics at the time of printing and significant developments which have occurred in 1971 have been embodied in each chapter. However, where this has not been practicable, brief details have been included in the Appendices. Details of the integrated economic censuses conducted in 1968-69 are included in Appendix A. Other information received too late for inclusion in particular chapters will be found in Appendix B 'Later Information'.

More detailed statistics relating to matter treated generally in the Year Book are available in the various statistical bulletins and other publications issued by the Bureau. Information about these publications is provided in the section 'Publication of Tasmanian Statistics'.

I gratefully acknowledge the valuable assistance given by officers of the various Commonwealth and State Government Departments and by others who have contributed information, often at considerable trouble, and by those who have provided photographs. Especially I should express my appreciation to the Government Printer and his staff for their enthusiasm and co-operation in printing this volume.

The Year Book has been compiled under the direction of Mr J. M. Holliday, B.COM.; Mr D. G. Rayner, B.A. DIP.ED. was responsible for the editing of this issue.

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Commonwealth Bureau of Census and Statistics,
HOBART, March 1972

SYMBOLS AND USAGE

The following symbols, where used, mean:

- n.a. Not available.
- n.e.i. Not elsewhere included.
- n.p. Not available for separate publication; included in totals where applicable.
- p Preliminary—figure or series subject to revision.
- r Figure or series revised since previous issue.
- .. Nil or less than half the final digit shown, or not applicable.
- Break in continuity of the series. (Where drawn across a column between two consecutive figures.)

A blank space indicates the figure is not yet available.

Values are shown in Australian dollars (\$) and/or cents (c).

Any discrepancies between totals and sums of components in tables are due to rounding.

LOCAL NAMES OF CERTAIN REGIONS

Tasmanians describe certain regions in a manner confusing to strangers; nevertheless this book employs local usage in most contexts. The chief peculiarities are:

North-West Coast: The *north* coast from approximately Port Sorell west to Cape Grim is called the *north-west coast*.

North-East Coast: The *north* coast from approximately Low Head east to Cape Portland is called the *north-east coast*. With most of the north coast referred to as either 'north-west' or 'north-east', the term 'north' is rarely applied to this coastal region.

West Coast: The Tasmanian west coast may refer only to the mining settlements of Queenstown, Rosebery, etc. In other contexts, the user may be thinking of inland mountains and rainforests, rather than of a coastline.

Midlands: The true midlands are probably the Central Plateau but the Tasmanian term means the rural area east of the Plateau and lying along the axis of the Hobart-Launceston road.

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Chapter 1

HISTORY AND CHRONOLOGY

DISCOVERY

The Period of Dutch Exploration

In the authors of antiquity, references are found to a land called 'Terra Australis' but it is the Dutch who are credited with the discovery of both Australia and Tasmania. The Dutch, with their trading posts in Java, represented the closest extension of European sea power near the north of the unknown continent and its discovery, either by accident or design, became inevitable.

In 1606, Captain William Jansz in the *Duyfken* was sent from Java to explore the islands of New Guinea and, crossing Torres Straits unawares, coasted along the west of Cape York Peninsula; this was the first of a series of voyages by Dutch captains who, in the next thirty years, acquired some knowledge of the western shores of the unknown land. Not all voyages were undertaken with the aim of exploration—Dirk Hartog's long journey along the western shore of Australia in 1616 resulted from his sailing too far east on the route from Cape of Good Hope to Java. Some later captains on the same route even regarded the western Australian coast as a suitable landfall before turning north for Java—a commentary on the difficulty of navigation when longitude had to be established by dead reckoning.

In 1642, the Dutch East India Company despatched from Java an expedition of two vessels, the *Heemskirk* and *Zeehan*, under Captain Abel Tasman, with instructions to investigate the extent of the unknown land thought to exist between New Guinea and the western coast of Australia. One immediate aim of the Governor General, Anthony Van Diemen, was to find a southern route from Java to Chile so that ships of the company could either trade or plunder along the Pacific coast of South America; a question to be resolved was whether any land mass extending far south blocked such a route.

The original plan was to sail west to Mauritius, to run down to 52° or 54° South latitude and then to proceed east; assuming no land was discovered, it was then intended to turn north in either the longitude of eastern New Guinea or possibly of the Solomons. If Tasman had followed this plan in every detail he might have discovered the east coast of Australia, anticipating Cook's work by more than a century. As it turned out, the extreme southern latitudes were too hostile and accordingly Tasman was sailing east in latitude 42° South when he sighted the mountainous west coast of Tasmania on 24 November 1642.

The Dutch navigator skirted the south coast and made a landing on the east coast for water in Blackman Bay (from an anchorage south of Marion Bay). He then sailed north to St Patricks Head, crossed the Tasman sea and discovered New Zealand, returning to Java by a route to the north of New Guinea. Tasman had thus performed the feat of circumnavigating Australia in a single voyage without once sighting the Australian continent.

In honour of the Governor General of the Indies, he named the first discovery Van Diemen's Land, imagining it to be the most southern extension of the Australian continent, an illusion that was only completely dispelled by Bass and Flinders when they circumnavigated the island in 1798. The Dutch did not follow up the discoveries of Tasman or their other explorers because they were interested in establishing trading posts only among peoples with a higher degree of civilisation than the natives of Tasmania or Australia appeared to possess. (Tasman's crew saw no natives in Tasmania but inferred their existence from sounds, cuts in trees and the smoke of fires.)

The Period of British and French Exploration

One hundred and thirty years passed before Tasmania was visited again, this time by the French navigator Marion du Fresne in 1772; he virtually repeated Tasman's original landfall, skirted the south coast and came to anchor in the bay that bears his name (Marion). His visit is memorable for the first contact between Europeans and Tasmanians and for the slaying of the first native by gunfire. Du Fresne himself was killed by Maoris in New Zealand on the same voyage.

A year later, Captain Tobias Furneaux in the *Adventure* became separated from Captain Cook in the *Resolution* on the route to New Zealand, and made for Tasmania to obtain water. He eventually anchored off Bruny Island in Adventure Bay but mistakenly believed himself to be in the area of Tasman's original landing which was at least forty-five miles to the north-east. From this original error sprang a confusion in nomenclature which persists to this day (e.g. Frederick Henry Bay, first named in Tasman's record, appears on maps in an area that Tasman did not even see). Furneaux then sought to investigate the possibility of a strait separating Tasmania from the continent recently explored by Cook, but shoals in the islands bearing his name (Furneaux Group) caused him to abandon the project and make for New Zealand.

In 1777, Cook, on his third voyage, used the Adventure Bay anchorage without detecting Furneaux's navigational errors.

The settlement at Port Jackson in N.S.W. in 1788 put Tasmania on a major sailing route, the first fleet passing south of the island on its way. To have sailed north of the island would have invited shipwreck on the Australian 'mainland' of which Tasmania was then believed to be part. In the same year, Captain William Bligh put into Adventure Bay with the *Bounty* on his way to Tahiti and to the famous mutiny; he had been on Bruny Island before, as Cook's sailing master.

Captain Cox of the *Mercury* anchored in the bay known as Cox Bight in 1789, charted some of the south coast and explored the strait between Maria Island and the east coast.

The next visitor (1792) was Admiral Bruny D'Entrecasteaux commanding *Recherche* and *Esperance* and searching for La Perouse who had not been heard of since 1788 when he sailed from Botany Bay. The Admiral sailed north hoping to anchor in Adventure Bay, but a navigational error put his ships too far west with the happy result that he discovered the magnificent channel separating Bruny Island from the Tasmanian mainland and was the first to sail up the Derwent River. Leaving Tasmania, the expedition sailed as far west as Cape Leeuwin in western Australia when it became imperative to take on water. It is an indication of the lack of knowledge then available

that D'Entrecasteaux had to return to Adventure Bay to fill his casks. In the same year, Bligh put into Adventure Bay on his way to obtain breadfruit trees in the Pacific for transplanting in the West Indies.

The year 1794 was notable for the visit of Commodore John Hayes who had sailed from India with the *Duke of Clarence* and the *Duchess*; he explored the Derwent as far as Mt Direction and named Risdon Cove, later to be the site of the first settlement.

Tasmania an Island

Two voyages now followed which established that Tasmania was an island. Surgeon George Bass in a whaleboat left Port Jackson in 1797, rounded Wilsons Promontory and discovered Western Port. The nature of tides and swells encountered told Bass that here was no bay but rather a strait of considerable magnitude. In 1798, Bass and Flinders were given the sloop *Norfolk* to decide the question for all time and they circumnavigated the island, commencing on a westerly course along the north coast where they discovered the Tamar estuary.

Fear of the French

In the original annexation of Australian territory by Cook in 1770, Tasmania was excluded since the southern limit was proclaimed as 38° South latitude. Formal possession of Tasmania was taken by Governor Phillip on 26 January 1788, when he read his commission to the people of the First Fleet at Sydney Cove. Now that it was established that Tasmania was an island, the authorities both in London and Sydney felt that some steps should be taken to block the French from making any claims to possession. The urgency of doing this was underlined by the arrival in D'Entrecasteaux channel of Admiral Baudin with the *Geographe* and *Naturaliste* in 1802. The expedition's navigator, Freycinet, charted Tasman and Forestier peninsulas and correctly identified the Frederick Henry Bay of the Dutch era. The expedition then called at Port Jackson before sailing south into Bass Strait where it was intercepted at King Island by Lieutenant Robbins in the *Cumberland*. Announcing his intention boldly to the French Admiral, the Lieutenant then disembarked his small company and formally annexed the island in the name of King George III. Governor King at Port Jackson who gave Robbins his instructions was not satisfied that merely formal acts of annexation would block the French indefinitely and decided that permanent settlements were required if British sovereignty were to be retained. To this decision can be attributed the settlement at Risdon (1803) and the Hobart and Port Dalrymple settlements of 1804.

Geography of the Original Landing

The State map published by the Tasmanian Lands and Surveys Department (1:250,000) makes easy the recognition of Tasman's landings on the east coast. His anchorage was near Visscher Island while the first landing was made by longboats which passed through the narrows into Blackman Bay. The second landing occurred in the south-east of North Bay where a lagoon proved too brackish for filling water casks.

The last landing was made near Tasman Bay where the navigator had hoped to take formal possession of the new land. The surf being too rough to get the longboat ashore, the carpenter swam through the waves, planted the Dutch flag and then fought his way back to the longboat.

SETTLEMENT

The First Settlement at Risdon (1803)

It will be observed that the original explorers of the island (including the French) had very largely concentrated their attention on the south-east and, in particular, on the sea approaches to the Derwent. Faced with the necessity for establishing a settlement to assert British sovereignty, Governor King had a number of possible sites to consider, including King Island, Port Phillip and Port Dalrymple (the Tamar Estuary). His eventual choice was the area of the Derwent and he reported his intention to the Admiralty as follows:

'My reasons for making this settlement are the necessity there appears of preventing the French gaining a footing on the east side of these islands; to divide the convicts; to secure another place for obtaining timber with any other natural productions that may be discovered and found useful; the advantages that may be expected by raising grain; and to promote the seal fishery.'

Commissioned to make the Derwent settlement, Lieutenant John Bowen sailed from Sydney with the *Albion* and *Lady Nelson*; the two vessels separated in a gale but were anchored at Risdon by 11 September 1803 when Bowen went ashore. The slenderness of Governor King's resources is apparent from the fact that the settlers—free, convict and military numbered only 49 and that the *Albion* was a British whaler under temporary charter (she caught three sperm whales on the voyage while becalmed).

The responsibility for the choice of the Risdon site attaches ultimately to Bass who had made detailed investigations of the Derwent in 1798 from the *Norfolk*. He had reported as follows: 'The land at the head of Risdon Creek, on the east side, seems preferable to any other on the banks of the Derwent'. It was not surprising, therefore, that Bowen's commission from Governor King directed him to locate the new settlement in the Risdon area. In actual fact, the site ultimately proved unsuitable due to the inadequate stream and the poor landing place; these handicaps were aggravated by the wretchedness of the human material at Bowen's disposal, a characteristic not altered when the camp was increased to nearly 100 persons.

If the settlement has any claim to fame, it derives from an encounter with natives who descended on the camp on a hunting expedition and who were fired on by the soldiers in a state of panic. Whether the future barbarities of inter-racial war could have been avoided is an open question but this encounter was the first phase of a struggle that ended in the extinction of a race.

The final act of the Risdon settlement was played on 9 August 1804, when the *Ocean* sailed for Port Jackson with Lieutenant Bowen and most of his people; Lieutenant-Governor Collins at the new settlement at Hobart had decided to close down the Risdon camp and held such a low opinion of these early colonists that he retained only thirteen convicts and one free settler.

The Settlement at Hobart (1804)

If Lieutenant-Governor Collins had carried out his original instructions, then Hobart today might have been the name of the capital of Victoria situated on Port Phillip Bay. The British Cabinet, impressed by Governor King's warnings on possible French penetration, decided to carry out the occupation of Port Phillip direct from Britain and, to this end, commissioned Lieutenant-Colonel Collins (Royal Marines) to command an expedition in the *Calcutta* with the *Ocean* as tender to secure the strategic Bass Strait. Control

of the Strait meant that the dangerous seven hundred mile journey around Van Diemen's Land was avoided and also prevented a hostile foreign power from threatening British sea lanes in the South Pacific.

The settlers eventually arrived, via Rio De Janeiro and the Cape of Good Hope, and formed a temporary camp near the site of the modern Sorrento township. For a variety of reasons, Collins was unhappy about the locality; he considered navigation hazardous, the soil poor and water inadequate. He was unwilling to develop promising land at the head of the bay due to the show of strength by large bands of natives and because of its distance from the open sea. Collins had seen the problems of isolation at Sydney and considered a settlement at the head of Port Phillip Bay unduly hazardous. With the wind in the wrong quarter a ship could be locked in the bay for several days thereby defeating the purpose of the settlement—a port to protect and control Bass Strait. Accordingly he wrote for advice to Governor King in Sydney and was left free to decide between the River Derwent and Port Dalrymple as possible sites for transfer of his command. He was probably swayed in his eventual choice of the River Derwent by its reputation as a safe harbour and the fact that Risdon had already been settled.

On 15 February 1804, Collins, with the first detachment from Port Phillip in the *Lady Nelson* and *Ocean*, anchored off the new settlement at Risdon. A quick inspection satisfied Collins that the site was quite unsuitable and he made his own reconnaissance, eventually selecting the area on the western bank known as Sullivans Cove and ordering that the expedition should be disembarked with all its stores in the vicinity of Hunters Island. In the same month, Collins reported to King that his two ships were 'lying within half a cable-length of the shore in nine fathoms of water'; the Lieutenant-Governor had selected gentle slopes for his settlement, located a fine stream running from Mt Wellington and found near the mouth of the stream depths of water which would accept the draught of any vessel of his day (or of the modern era).

The following table shows the early composition of the settlement at Sullivans Cove (but excludes details of the Risdon camp):

Number Victualled at Sullivans Cove, 26 February 1804

Quality	Men	Women	Children
Military Establishment	26	1	..
Civil Establishment	6	..	..
Settlers	13	5	13
Convicts	178	9	8
Supernumeraries	(a) 3	..	..
Total	226	15	21

(a) Including one aboriginal from Port Jackson.

The strength of the colony was increased to 433 persons in June 1804 when the *Ocean* returned from Port Phillip, where it had taken aboard the balance of the original expedition. From the camp on Sullivans Cove has sprung the present city and port of Hobart.

David Collins was no amateur in the field of colonisation—he had sailed with Governor Phillip as Judge Advocate in the first fleet in 1788 and had acted as Secretary to the Governor till 1796 when he returned to Britain with

excellent recommendations. His memory is honoured in Hobart's Collins St, in the Anglican Cathedral (St Davids) and by the memorial above his grave in St Davids Park.

The Settlement on the Tamar (1804)

While the Lieutenant-Governor was still in Port Phillip Bay, wondering where best to settle, he sent his namesake, William Collins, on a voyage of exploration to the Tamar estuary. William Collins followed the river up as far as the Cataract Gorge and returned to Port Phillip with a good account of the possibilities of the Tamar for settlement; in his absence, however, the Lieutenant-Governor had made up his mind and was already preparing for the expedition to the Derwent.

Later Governor King received a despatch from Lord Hobart (Secretary of State for the Colonies) who, by a grotesque error, recommended the establishment of a settlement at Port Dalrymple 'upon the southern coast of Van Diemen's Land and near the eastern entrance of Bass' Straits' (sic). If Lord Hobart really meant 'south' then Collins' move to the Derwent had anticipated his wishes. However, since Collins had in fact left Port Phillip, was it not necessary to re-occupy Port Phillip or possibly to watch the Strait from Port Dalrymple? King knew that Hobart's despatch was written in ignorance of Collins' move and accordingly decided to use his own initiative without raising questions of geography with the Secretary for Colonies.

In Hobart's despatch, Lieutenant-Colonel William Paterson (New South Wales Corps) was nominated as Lieutenant-Governor of the new colony. Paterson set sail with 57 soldiers and convicts in the *Integrity* and the *Contest* but after a month of adverse winds both ships were forced back to Port Jackson. A second attempt was made using *Buffalo*, *Lady Nelson*, *Francis* and *Integrity* and increasing the party to 181. This time the Tamar was successfully entered but H.M.S. *Buffalo* went aground and was, with some difficulty, brought to anchor in Outer Cove (George Town) on 4 November 1804. Lieutenant-Colonel Paterson decided that *Buffalo* must be immediately unloaded and accepted the Outer Cove site as a suitable camp while he undertook a more detailed reconnaissance of the Tamar.

Although he penetrated as far as the fertile site of Launceston, Paterson made the extraordinary decision to set up his headquarters at the head of West Arm and founded York Town, while still maintaining small establishments at Outer Cove, Low Head and Green Island. In deciding on York Town, one can only imagine that Paterson was guided purely by the strategic necessity, as was Collins at Sorrento, of being near to Bass Strait and that he gave little thought to the problem of soil fertility and cultivation.

In March 1806, Paterson was willing to admit that York Town was a most unsuitable site and he accordingly moved his headquarters to the present site of Launceston. Today York Town and Risdon have one thing in common—the almost complete absence of any indication that settlements had ever existed. The Lieutenant-Governor's name is commemorated today in Launceston's Paterson Street and Paterson Barracks.

Paterson, before setting out on his expedition, had been involved in an argument as to his status but Governor King had resolved the matter by dividing Tasmania at the 42° parallel and making Collins and Paterson sovereign in their respective halves, but subordinate to him as Governor. In naming the Tamar and Launceston, Paterson was honouring King who came from Launceston in Cornwall.

THE GOVERNORSHIPS OF THOMAS DAVEY AND WILLIAM SORELL

Introduction

In previous Year Books major articles have covered the administrations of the State's early governors. The following two articles break with this tradition to the extent that they are presented as profile sketches rather than in-depth examinations of governors Thomas Davey (1813-17) and William Sorell (1817-24). This change arises from the lack of readily accessible source material covering the period of their governorships, and also involves a departure from the chronological order of treatment previously undertaken.

1. Thomas Davey

Early Life and Military Career

Thomas Davey, born in 1758 was the son of John Davey, a Tiverton (Devon) mill owner. The family was of some social standing being rated as minor gentry, while Davey senior was a member of the Tiverton Corporation.

On 18 July 1778 Thomas Davey joined the Plymouth Marine Division as a second lieutenant and in 1779 saw action in the American War of Independence on H.M.S. *Vengeance*. He transferred to H.M.S. *Preston* and served in the East Indies from June 1779 until July 1780 when he was invalided. He was promoted to first lieutenant in the Plymouth Division in November of that year.

He volunteered to join Phillip's First Fleet, which was sent to found a colony in New South Wales and remained there from 1788 until 1792, when, following a quarrel with the Commandant of the New South Wales Corp, Major Ross, he returned to England.

Davey was fortunate to have the support of Dudley Ryder, the first Earl of Harrowby, who saved him from personal disaster on several occasions. John Davey asked Harrowby for a captain's posting for his son in the New South Wales Corps, but Harrowby was either unwilling or unable to satisfy the request and it was not until 9 May 1795 that Thomas Davey obtained his captain's commission in the Chatham Division. Following this posting Davey saw active service in Europe and America and in 1805 fought at the Battle of Trafalgar.

He won distinction at the Mutiny of the Nore, when as captain of the marines on H.M.S. *Director* he led a fighting party which recaptured the vessel from the mutineers.

When the news of the death of David Collins (first governor of Van Diemen's Land) reached England, Thomas Davey immediately sought the position soliciting aid from his benefactor (Harrowby) to obtain the post.

The strength of Harrowby's support is evident from the fact that Davey, at this time a relatively little known marine major, of uncertain temperament and already a failure as a colonist in New South Wales, was successful in gaining preference over Major Fouveaux, an ex-commandant of Norfolk Island and the man who had guided the infant Port Jackson colony through a turbulent and unstable period following the deposition of Governor Bligh during the Rum Rebellion.

Arrival in the Australian Colonies

Although the news of Collins' death had reached England in 1810 it was not until June 1812 that Davey sailed for the colony; Macquarie being informed of his new subordinate only the previous March i.e. 24 months after the demise of David Collins.

Arriving in Sydney in October 1812 he exhibited little enthusiasm to take up his post and it was not until 4 February 1813 that he relieved the Acting Commandant, Major Geils of the responsibility for the southern colony.

Governor Lachlan Macquarie was far from impressed with his new lieutenant and commented in a letter to the Colonial Secretary, Lord Bathurst, that Davey exhibits an '... extraordinary degree of frivolity and low buffoonery in his manners ...'.

Comments of this nature were not uncommon as a contemporary account of his arrival in the colony stated that '... on the day of his landing here he conducted himself in a very odd and ungovernorlike (sic) manner. Everyone knew that he was going to land publicly at a certain time and the bulk of the population poured forth to see the ceremony and give him the best welcome they could. The day was as the dear old fellow expected it: "... As hot as Hell and a little hotter ..." and when he landed he answered the hurrahs of the crowd not by taking off his hat to them but by pulling off his coat and made the best of his way up to Government House in his shirt sleeves, at the head of the noisy, tattered and malicious (sic) that followed him!'

Thus installed, 'Mad Tom the Governor', as the less polite colonists soon called him, began the first of his five years in office.

While Macquarie attacked Davey's 'depravity and drinking' claiming that he led only a 'dissipated' life, Davey himself attempted to develop the colony.

Problems

Heavily handicapped by an inferior staff Davey struggled against considerable odds when attempting to administer the colony. His Deputy Commissary, L. Fosbrook, was convicted of criminal fraud and dismissed while the replacement P. G. Hogan was equally dishonest. At George Town, the Government Surveyor, Peter Mills and the acting Deputy Commissary, George Williams aided by two doctors, one a magistrate, escaped to the bush to avoid creditors and became 'knights of the road'.

He was further hamstrung by not being permitted to draw bills on the British Treasury (although lieutenant-governors in other colonies had been permitted to do so). Being unable to charter ships, grant land or proclaim martial law he did the best he could under extremely difficult circumstances. Despite these disadvantages and the stopping of his salary by the Colonial Office while his actions as paymaster in the Marines were investigated, he managed to govern the colony and even his chief critic Macquarie reported that Davey had been 'pretty correct'.

A lack of a law court in Van Diemen's Land partly contributed to the civil disorder in the colony. Although some of the worst convicts in the British Empire had been incarcerated in the colony only two court cases resulting from colonial crimes in Van Diemen's Land were tried in Sydney during 1815 and 1816. Witnesses were not willing to make the long and costly voyage to Sydney, especially prior to 1817 when some payment for expenses was first introduced; seven shillings per day for 'gentlemen' and five shillings per day for 'other persons'.

During 1813 the situation in the colony became critical as Howe and bushrangers like him, terrorised the colony. Lieutenant-Governor Davey in attempting to control the situation first declared an amnesty for the bushrangers.

'All (the) naughty bush boys who surrendered themselves before a certain day were to be forgiven. The plan was thoroughly successful. Desiring at least a Hobart Town holiday, and a rest from their labours, every Bushranger came in; Howe with the rest. The Governor was satisfied, and so were the thieves.

When tired of their vacation, these gentlemen of the woods betook themselves to their old occupation, and the country was thrown into the greatest disorder by their predatory inroads.' (Bonwick, *The Bushrangers*.)

He then proclaimed martial law although legally he did not have the power. This greatly angered Governor Lachlan Macquarie who sent him a dispatch deploring the action taken. Davey's motive in declaring martial law was to eliminate bushranging, a course later vindicated by Commissioner Bigge and subsequent events. Angered, Macquarie may have been, but he did not abolish martial law for some six months.

Repeal of martial law led to an immediate upsurge in bushranging and a resulting decline in the morale of the colonists.

Commerce, Whaling and Sealing

In June 1813 Hobart was declared a free port; trade prospered; but Macquarie was annoyed by the shortening of the capital's name from Hobart Town.

Commerce developed and traders such as Messrs Kemp, Gatehouse, Lord and Reibey acted as importers of English manufactures. A local trader, Birch, dispatched Captain James Kelly, harbourmaster and explorer, to circumnavigate the island and examine the west coast of the colony. Kelly discovered Port Davey and Macquarie Harbour. For this service to the colony Birch was granted a one-year monopoly to exploit the pine forests of the west coast.

Davey sponsored the sealing and whaling industries which were later to become of significance to the struggling colony.

Hobart developed rapidly as a whaling and sealing centre during the 1820s, yet within twenty years the industry was in the decline largely due to indiscriminate slaughter of both whale and seal.

Colonial Society and Development

In an attempt to correct the population imbalance Davey had two hundred female convicts imported from Sydney. West (*History of Tasmania*) describes the selection of the convicts from the *Kangaroo*: 'There was little delicacy of choice: they landed, and vanished; and some, carried into the bush, changed their destination before they reached their homes. Yet such is the power of social affections, several of these unions yielded all the ordinary consolations of domestic life!'

Davey improved the spiritual life of the colony by having the foundations of St Davids Church laid, and supported Andrew Bent in the establishment of the colony's second newspaper, the *Hobart Town Gazette and Southern Reporter*.

Macquarie continued to press for Davey's replacement and in April 1816 Bathurst acquiesced.

He was not removed from office, merely asked to resign. This kindness was in part due to the fact that, prior to his arrival, an American privateer captured the Davey family luggage. Thomas Davey claimed £4,500 compensation for the loss. In lieu of monetary compensation he was granted 2,000 acres of land which he refused as 'inadequate'. Following the intervention of Harrowby, a grant of 8,000 acres was made and accepted. In addition he had been granted 3,000 acres on the Coal River in 1813. Yet despite 11,000 acres of good grazing land he failed as a settler following his resignation. Macquarie out of compassion for Davey's family granted his daughter, Lucy Margaretta, 1,000 acres and ordered that she and her mother be supported by the public store (commissariat) for twelve months.

Davey, a failure as a settler, returned to England and on 2 May 1823 died in London.

Assessment of Thomas Davey

The selection of Thomas Davey as Governor may have been an error since a man of action versed in the military arts was not necessarily a logical choice as a governor of an infant colony.

Notorious for drinking and debauchery and famed for his activities at the Union Hotel in Campbell Street, Davey appeared unable to recognise the folly of his actions. Even in his correspondence to his mentor, Lord Harrowby, in December 1817 he appears to be under a delusion as to his past performance as Governor as shown in the following letter to his patron:

'I feel inexpressively proud to declare that during the time myself and family were representatives at Van Diemen's Land, Religion, Virtue, Morality and Example was the order of every succeeding day, but now, my Lord, I with sorry (sic) perceive a disregard of all moral restraint and even timid attention to principle. The very excesses of virtue are to be honoured; but they are also to be corrected by prudence, by firmness, by a rational and judicious attention to circumstances, by an inflexible adherence to principle, in these points of view it appears to me that Religion, Virtue, Morality and Example in an Infant Colony is, at the present moment an object of great public concern.

During my administration the Government House on the birth days of our most Gracious Queen was throng'd with the most respectable females, married and unmarried of both settlements. But now My Lord, Alas, not a female appears at Government House. Thus unhappily circumstanced society sinks in oblivion.

I remain, My Lord, with all due respect, Your Lordship's very faithful, humble servant.'

Previous assessments of Davey based on Governor Lachlan Macquarie's comments may have been too harsh as Macquarie was a very strict administrator and Davey's indiscretions would have agitated him and biased his attitude.

Perhaps the kindest appraisal of Thomas Davey is given by West in his *History of Tasmania*: 'The modern colonist will remember, that the tastes of society have since that period been modified, even in Great Britain; and that character can never be fairly judged when separated from the circumstances in which it is developed. Then, the town was a mere camp: the etiquette of office when a community is advanced would be folly in its infancy.'

Davey arrived to find an embryonic colony languishing after the death of Collins. As a governor he was not a great success, but despite his faults he laid the foundations for the future development of the colony. He left it in a stronger condition than on his arrival; timber, shipping, whaling and sealing were all promoted during his governorship and were to become the basis of the colonial economy during the second quarter of the nineteenth century.

2. William Sorell

Military History and Early Life

William Sorell was born in 1775 the eldest son of Lieutenant-General William Alexander Sorell, of the Coldstream Guards and Colonel of the 48th Foot Regiment.

At the age of fifteen he became an ensign in the 31st (Huntingdonshire) Regiment and following his promotion to lieutenant in 1793 was transferred to the West Indies preparatory to the 1794-95 campaign against the French.

Military Campaigns: Between February and April 1794, British forces occupied Martinique, St Lucia and Guadeloupe. A French-sponsored anti-British revolt among the natives and plantation slaves throughout the Windward Islands led to the evacuation of Guadeloupe (December 1794) and St Lucia (June 1795). Martinique was held with difficulty.

During the campaign Sorell came under the notice of the force commander, Sir Ralph Abercrombie, and of Sir James Murray (later Secretary for War), Lieutenant-Colonel of the 94th (Foot) Regiment, both of whom played important parts in Sorell's later life.

The situation became critical during 1795, sickness and privation causing more British casualties than enemy action. Re-inforcements from Britain boosted the force to 18,000 and St Lucia was invaded. In the ensuing battle Sorell was severely wounded and was rewarded for initiative and courage by being promoted captain in the field.

He returned to the United Kingdom in 1797 and joined the Royal Irish Regiment (18th) with which he took part in the abortive North Holland campaign of 1799. During this campaign two futile attempts were made to capture Amsterdam. The expedition, ill-equipped and poorly-trained, was evacuated from the Dutch coast in November 1799.

Transferred to the 4th (King's Own) Regiment, Sorell took part in a series of unproductive raids on the Spanish naval stations of Ferrol, Vigo and Cadiz. Sorell then returned to England and was promoted to major in the 43rd (Monmouthshire) Regiment.

Cape Colony: In 1807 Sorell was made Deputy Adjutant-General of British Forces at the Cape Colony, shortly after its capture from the Dutch. The colony was in disorder and it was here that William Sorell exhibited the great administrative ability which was to lead to his eventual appointment in Van Diemen's Land.

Sorell's wife and family remained in England and during his term in the Colony, Sorell formed a relationship with Mrs Kent, wife of a lieutenant in the garrison force. Kent later instituted legal proceedings against Sorell for 'criminal conversation with the plaintiff's wife' and was awarded £3,000 damages. The repercussions of this suit were later to end William Sorell's civil and military careers.

In 1812 he returned to England and joined the 46th Regiment but resigned the following year, possibly due to criticism of his relationship with Mrs Kent.

Van Diemen's Land: On 3 April 1816 he was appointed Governor of Van Diemen's Land. He sailed for Sydney in the transport *Sir William Bensely* and arrived at Hobart Town on 9 April 1817. The *Hobart Town Gazette* said the *Cochin* arrived '... having on board William Sorell, Esq. the newly appointed Lieutenant-Governor of the Colony, and Mrs Sorell and Family.' In fact Sorell had left his wife in England and arrived with Mrs Kent.

Administration

Introduction: On his arrival, Sorell found the domestic situation in a state of disorder which bordered on chaos. Under Davey the convicts had been allowed great freedom, bushranging was rife and the pastoral development of the colony was almost non-existent as a result of disruption caused by the marauding bands of brigands.

Convicts: Sorell took immediate steps to pacify the colony and reorganise the convict system by classifying convicts into five categories according to the degree of supervision considered necessary.

1. *Tickets of Leave:* These were granted, on arrival, to convicts who possessed either property or social standing. Tickets were also granted for industry and good conduct.

2. *Assignment:* Able bodied convicts or those with some particular skill were assigned to landowners, merchants, etc. as a form of coerced labour. In return for the supply of labour the employer was required to support the assignee by providing food, clothing and lodging. Labour of this type included shepherds, domestic servants, manual labourers, cooks, etc.

According to social theorists these two classes stood the best chances of being rehabilitated. The remaining convicts were divided into the following three groups depending upon the degree of restriction and surveillance required.

3. *Permanent Restraint:* Hardened criminals with little or no chance of redemption were confined permanently in prison usually in solitary confinement. Maximum security prisons to house these criminals were progressively constructed at Hobart Town, Macquarie Harbour, Maria Island and finally at Port Arthur.

4. *Moderate Restraint:* This class of prisoner was serving a sentence but had not fallen to the level of the hardened criminal. Confinement was usually in a permanent prison but not to the level of security of those under permanent restraint.

5. *Chain Gangs:* Sorell founded two types of chain gangs: (i) those for public works outside Hobart; and (ii) gangs for work in the Hobart Town area (gangs which required confinement during the night).

The system was a combination of the 'Assignment' and 'Probation' systems which led to the downfall of the later Governors Sir John Eardley-Wilmot and Sir John Franklin (see the 1968 and 1969 *Year Books* respectively).

Macquarie Harbour

Introduction: As the colony suffered from the lack of a secure prison, Sorell pressed on with the construction of the Hobart Town Gaol. Completed in April 1822 the gaol had quarters for one hundred prisoners; subsequently it was extended to provide accommodation for an additional one hundred inmates.

In December 1821 Sorell dispatched Lieutenant John Cuthbertson of the 48th Regiment with two ships, the *Sophia* and the *Prince Leopold* and one hundred and one persons to establish a penal settlement at Sarah Island in Macquarie Harbour, on the west coast of Van Diemen's Land. A harbour which had been discovered by Captain James Kelly on his journey of circumnavigation of Van Diemen's Land in 1816.

Sorell had long felt the need for an isolated penal settlement for the lower criminal elements. Macquarie Harbour met this requirement as it was separated from the rest of the colony by marsh, forest, mountain and raging torrent.

The advantages of a prison island at Macquarie Harbour were fourfold: (i) being an island escape was particularly difficult; (ii) if a prisoner did manage to reach the shore the geographical isolation usually deterred further movement as the prison was more than one hundred miles from the nearest habitation over extremely rugged terrain; (iii) the climate, although wet, was good for physical activity; and (iv) the timber in the locality—Huon pine—was excellent for ship building (the major industry at the penal station).

The isolation also had disadvantages; almost all food supplies had to be imported from either Hobart Town or Port Dalrymple, a particularly dangerous journey as the passage of Hells Gates (over the bar at the mouth of Macquarie Harbour) was extremely treacherous; while the under-strength military establishment was unable to maintain sufficiently strict supervision.

Sarah Island: The island chosen for the prison was three miles from the mouth of the Gordon River and fifteen miles from the Hells Gates at the head of Macquarie Harbour. Half a mile long by a quarter of a mile wide and of irregular shape it comprised only twenty-five acres, which eventually led to extreme overcrowding.

Buildings constructed on the island included a two-storey prisoners' barracks and maximum security gaol providing accommodation for 350 convicts and quarters for the Commandant, his officers and their families.

Four hundred yards from the settlement was a small rock, known as Grummet Island. Cells were carved into the rock faces of the islet and the hapless prisoner under punishment was forced to wade ashore, clamber into a cell and remain incarcerated for the duration of his sentence exposed to the westerly wind and drenched by the sea.

Convicts who died at the settlement were buried on Halliday Island named after the first man interred on the isle. Of the 85 deaths recorded at the settlement 35 were from natural causes; 27 from drowning; twelve were murdered; eight were accidental; and three were shot by prison guards.

Conditions were so appalling that convicts committed suicide or murder to escape from the inhuman prison. Actions of this type were not solely restricted to Macquarie Harbour as similar events were recorded at most penal stations throughout the British Empire during the first half of the nineteenth century. Marcus Clark vividly describes a typical planned murder on Norfolk Island in his novel *For the Term of his Natural Life*:

'The scheme of escape hit upon by the convict intellect was simply this. Three men being together, lots were drawn to determine whom should be murdered. The drawer of the longest straw the "lucky" man. He was killed. The drawer of the next longest straw was the murderer. He was hanged. The unlucky one was the witness. He had, of course, an excellent chance of being hung also, but his doom was not so certain, and he, therefore looked upon himself as unfortunate.'

The lash was frequently used. In 1822, 169 convicts out of the 189 at the prison received a total of 7,000 strokes and during the preceding three years two-thirds of the inmates were punished with a total of 6,280 lashes.

Isolation did not completely deter attempts to escape. In 1822 eight men and five pursuers disappeared into the rain forest and were never seen again. Later in the year eight men broke-out and headed northwards towards Bass

Strait. Some weeks later two human scarecrows appeared out of the forest with tales of cannibalism. The name Pieman River commemorates this black incident in Tasmanian history, for it is here that the deed took place.

An escape which greatly affected the colony occurred in 1824 when a group of prisoners led by a convict named William Brady captured a newly constructed schooner and sailed for the Derwent, where they terrorised the farming community until captured by military action.

Bushrangers

Following the failure of Davey to control bushranging (due to his lack of judicial power) Sorell faced a position very close to armed revolt. He took vigorous action against the bushrangers and, in particular, Michael Howe who met his end on 21 October 1818 at the hands of Messrs Worrall (a convicted mutineer), Warburton (a kangaroo hunter and receiver of stolen goods) and Pugh (a private in the 48th Regiment).

The capture of Howe is vividly described in the *Military Sketch Book*.

"I was now," said Worrall, "determined to make a push for the capture of this villain, Mick Howe, for which I was promised a passage to England in the next ship that sailed, and the amount of the reward laid upon his head. I found out a man of the name of Warburton, who was in the habit of hunting kangaroos for their skins, and who had frequently met Howe during his excursions, and sometimes furnished him with ammunition. He gave me such an account of Howe's habits, that I felt convinced we could take him with a little assistance. I therefore spoke to a man named Pugh, belonging to the 48th Regiment, one who I knew was a most cool and resolute fellow. He immediately entered into my views, and having applied to Major Bell, his commanding officer, he was recommended by him to the Governor, by whom I was permitted to act, and allowed to join us; so he and I went directly to Warburton, who heartedly entered into the scheme, and all things were arranged for putting it into execution. The plan was this: Pugh and I were to remain in Warburton's hut, while Warburton himself was to fall into Howe's way. The hut was on the River Shannon, standing so completely by itself, and so out of the track of anybody who might be feared by Howe, that there was every probability of accomplishing our wishes, and *scotch the snake*, as they say, if not kill it. Pugh and I accordingly proceeded to the appointed hut. We arrived there before day-break, and having made a hearty breakfast, Warburton set out to seek Howe. He took no arms with him, in order to still more effectually carry his point, but Pugh and I were provided with muskets and pistols. The sun had been just an hour up, when we saw Warburton and Howe upon the top of a hill, coming towards the hut. We expected they would be with us in a quarter of an hour, and so we sat down upon the trunk of a tree inside the hut, calmly waiting their arrival. An hour passed, but they did not come, so I crept to the door cautiously and peeped out. There I saw them standing within a hundred yards of us in earnest conversation; as I learned afterwards, the delay arose from Howe's suspecting that all was not right. I drew back from the door to my station, and in about ten minutes after this we plainly heard footsteps and the voice of Warburton. Another moment, and Howe slowly entered the hut—his gun presented and cocked. The instant he espied us, he cried out "Is that your game?" and immediately fired, but Pugh's activity prevented the shot from taking effect, for he knocked the gun aside. Howe ran off like a wolf. I fired, but missed. Pugh then halted and took aim at him but also missed. I immediately flung away the gun and ran after Howe; Pugh also pursued; Warburton was a considerable distance away. I ran very fast; so did Howe; and if he had not fallen down an unexpected bank, I should not have been fleet enough for him. This fall, however, brought me up with him; he was on his legs and preparing to climb a broken bank, which would have given him a free run into the wood, when I presented my pistol at him, and desired him to stand; he drew forth another, but did not level it at me. We were then about fifteen yards from each other; the bank he fell from between us. He stared at me with astonishment, and to tell you the truth, I was a little astonished at him, for he was covered with patches of kangaroo skins, and wore a black beard, a haversack and powder-horn slung across his shoulders. I wore my beard also as I do now, and a curious pair we looked like. After a moment's pause, he cried out "Black beard against grey beard for a million!" and fired; I slapped at him, and I believe hit him, for he staggered, but rallied again, and was clearing the bank between him and me, when Pugh ran up, and with the butt-end of his firelock knocked him down, jumped after him, and battered his brains out, just as he was opening a clasp knife to defend himself."

With the demise of Michael Howe, Sorell using military action soon eliminated the remaining 'knights of the road' and those who aided them. Peace returned to the colony.

General Administration

Sorell turned to the problems of governing and developing the colony and proved to be a first class innovator and a capable administrator.

Aboriginals: While serving in the Cape Colony, Sorell became aware of the problems facing a multi-racial society, and a large proportion of his work in that colony was involved in protecting the interests of both the white colonists and the indigenes. It is probable that his skill in handling the South African situation contributed to his appointment as Lieutenant-Governor of the Australian colony.

The physical problem was not as great in Van Diemen's Land as the Tasmanian Aboriginal was a numerical minority, the reverse of the South African situation.

Sorell had been instructed by Macquarie to conciliate with the aboriginals and proceeded to prevent maltreatment and murder where possible. Strict penalties were introduced, although power of the deterrent in rural districts is open to conjecture.

A government regulation appearing in the *Hobart Town Gazette* of 13 March 1819 instructed magistrates to note any native children in the hands of stockmen, to report on new native arrivals in the district, to send any children not adequately cared for to Hobart Town and to ensure that any youths or children living with stockmen were doing so with their parent's permission.

Sorell made the first attempt to regulate the lives of the native population but it was left to Governor George Arthur to develop the 'protective custody' concept with his infamous 'Black Line' (described in the 1968 *Year Book*) and the aboriginal settlement at Wybalenna on Flinders Island.

Travel Permits: To control the movement of crown servants and free settlers and to prevent aid easily reaching bushrangers he introduced a 'passport system'. Travel outside the two settlements was restricted and required the personal signature of the Lieutenant-Governor or the Commandant of the Port Dalrymple settlement. The system proved effective and reduced the aid to the marauding bushrangers so effectively that they were forced from the bush-land and eliminated by police action. The passport regulations controlling free settlers were repealed in 1823, being no longer necessary for the internal security of the colony.

Civil Service: The administration of the colony was particularly weak when Sorell took control. He instituted reforms in the civilian administration including stated duties for officers of the Civil Service, a correspondence record system and an improved financial accounting system.

The soft spot in the colonial administration was at Port Dalrymple. Governor Lachlan Macquarie envisaged George Town as the major town and Launceston as a minor settlement. This was an unrealistic attitude and ignored the development that had occurred at the head of the Tamar River. Successive commandants of the Port Dalrymple settlement proved hostile to lieutenant-governors at Hobart Town and incapable in their own administration. Major Stewart was lax and ineffective and his replacement Major Gilbert Cimitiere, arrogant and ineffectual. So bad became the relationship

between Sorell and Cimitiere that in 1820 Sorell threatened to place the matter before Lachlan Macquarie in Sydney. Cimitiere apologised and the administration on the northern settlement slowly improved.

Education: Approval was obtained from Governor Macquarie for the construction of country schools in areas of high population concentration. This meant that for once the poor settlers gained to the detriment of the rich as high population densities resulted from a large number of small farms being clustered together. At the completion of the programme Launceston, New Norfolk, Pittwater and the Clarence Plains each had one school. At this time five schools were offering classes in Hobart Town.

Public Works: The colony was fortunate in having the services of two extremely able military engineers during the stewardship of Sorell. Captain Nairn of the 4th Regiment and Major Thomas Bell, CB laid the foundations of an efficient road network in the Hobart Town area. During the years 1818 and 1819 roads were also constructed from Hobart Town to New Norfolk, to Richmond on the Coal River (necessitating the construction of the first stone bridge in the colony), to link Hobart Town with Launceston via bridges at Ross and Campbell Town, and from Launceston to George Town at the mouth of the Tamar River.

New building regulations were introduced requiring the issue of an 'Authority to Build' in Hobart Town. Work continued on the church (St Davids), while in 1818 the Government Flour Mill and artillery positions at Knopwood Point (near Salamanca Place) became operational. The County Gaol was completed and occupied in April 1822.

Van Diemen's Land Bank: Financial transactions in the colony were extremely complicated as a number of different specie was in circulation; the Spanish dollar was the most common, but government transactions were in the pound sterling. To overcome this problem and to provide a means of raising capital for colonial projects Sorell actively supported the establishment of a colonial bank. Opened in 1824 (the Bank of New South Wales had been established in 1817) the bank, known as the Van Diemen's Land Bank, had a paid up capital of \$40,000 (Spanish) divided into 200 shares of \$200. The bank played a significant part in the development of the colony until its failure in 1891.

Mail Services: In 1816 a fortnightly mail service had been started by Governor Davey to the northern settlement. This was improved by the introduction of two couriers in 1818 and by 1820 the service was on a weekly basis. The fee for the inter-settlement post was one shilling for letters under one ounce and three shillings for a two ounce letter. By 1828 regular mail deliveries were being made to George Town, Sorell, Pittwater, Coal River Plains, New Norfolk, Macquarie Plains and the Clyde River district in addition to the weekly Hobart Town-Launceston service.

CHRONOLOGY

Preface

The following chronology was compiled in two sections, the period 1642 to 1929 from a document specially prepared by officers of the State Archives, and the period beginning 1930 from a search of contemporary newspapers by Bureau officers.

In the record of more recent years, it was found impossible to describe purely Tasmanian events in isolation since certain national events necessarily form a part of the history of a State within a federal system; particularly is this true with regard to some Commonwealth Government decisions, the state of the economy and industrial arbitration. On the other hand, there is the difficulty of deciding which events of a purely local character are sufficiently important to warrant inclusion. Obviously Tasmania's first Parliament in 1856 is an item appearing more worthy of permanent record than Hobart's adoption of parking meters in 1955. This difficulty of selection is partly avoided by giving the record of recent years in considerably more detail but inevitably such a policy results in matters of major and minor importance being mingled without distinction. It follows also that the second part of the chronology is limited largely to what the newspapers of the day considered important and that some events of greater significance may have escaped notice.

To round off the picture of any given year, there is a constant temptation to introduce events of world importance; as far as possible, this has been avoided except where such events had considerable local impact, for example, the sighting of a space satellite overhead, a war involving Australians or the death of a Prime Minister. In no way should the record which follows be interpreted as an 'official' chronology of the State; in actual fact, the record derives from two levels of subjective evaluation, firstly, the selection of items of importance by contemporary journalists, and secondly, the further selection from this narrowed field of items that appeared important to the compilers of the chronology. Some items have been introduced not because they are important but because they have a strong local flavour, for example, the suspected sighting of a Tasmanian Tiger, the winning yacht in the Sydney-Hobart race or an isolated football victory over a V.F.L. side.

Chronology of Events from First Discovery of Tasmania

- 1642 Abel Janszoon Tasman, commanding *Heemskirk* and *Zeehan*, sighted west coast and named his discovery 'Anthony Van Diemenslandt'. Landings on Forestier Peninsula and near Blackman Bay on east coast.
- 1772 Landing of a party from Du Fresne's expedition at Marion Bay and affray with the aboriginals.
- 1773 Tobias Furneaux, in the *Adventure*, became separated from James Cook in *Resolution* and landed party at Adventure Bay.
- 1777 James Cook anchored *Resolution* in Adventure Bay on third expedition.
- 1788 William Bligh anchored *Bounty* in Adventure Bay on first breadfruit expedition.
- 1789 John Henry Cox sailed *Mercury* from Cox Bight to Maria Island.
- 1792 William Bligh, on second breadfruit voyage, anchored *Providence* in Adventure Bay. Bruny D'Entrecasteaux, commanding *La Recherche* and *L'Esperance*, discovered D'Entrecasteaux Channel and charted south-east coast.
- 1793 D'Entrecasteaux returned for further exploration of south-east coast. John Hayes, commanding *Duke of Clarence* expedition, explored Derwent River.
- 1798 Matthew Flinders and George Bass circumnavigated Tasmania.
- 1802 Nicholas Baudin, commanding *Geographe* and *Naturaliste*, explored south-east coast.
- 1803 John Bowen's party of 49 made first settlement at Risdon Cove.

- 1804 David Collins' settlement party landed at Sullivans Cove (Hobart). Aborigines killed in an affray at Risdon. Risdon settlement closed down. William Paterson's settlement party landed at Port Dalrymple (Tamar Estuary).
- 1805 Collins forced by famine to cut rations by one-third.
- 1806 Settlers moved from York Town to Launceston area (Tamar Estuary).
- 1807 Thomas Laycock's party crossed island overland from Port Dalrymple to Hobart. First Norfolk Island settlers shipped to Hobart in *Lady Nelson*.
- 1809 Governor William Bligh aboard *Porpoise* anchored in Derwent after N.S.W. mutiny and embarrassed Collins with problem of jurisdiction.
- 1810 Lieutenant-Governor Collins' death. Issue of the newspaper *Derwent Star*.
- 1811 Governor Lachlan Macquarie's first visit to Tasmania.
- 1812 Lieutenant-Governor Thomas Davey arrived. Northern settlement at Port Dalrymple made subordinate to Hobart. *Indefatigable* brought first shipload of convicts direct from England.
- 1815 Hobart and Port Dalrymple declared free ports for import of goods. Davey proclaimed martial law against bushrangers. James Kelly circumnavigated island in a whaleboat.
- 1816 First issue of *Hobart Town Gazette*.
- 1817 Succession of William Sorell as Lieutenant-Governor.
- 1818 Death of Michael Howe, notorious bushranger.
- 1820 Visit by John Thomas Bigge to conduct his enquiry into colonial administration.
- 1821 Second tour by Governor Macquarie.
- 1822 Penal settlement established at Macquarie Harbour.
- 1823 Passage of British Act 'for the better administration of justice in N.S.W. and Van Diemen's Land'.
- 1824 Inauguration of Supreme Court. Arrival of Lieutenant-Governor George Arthur.
- 1825 First Launceston newspaper, the *Tasmanian and Port Dalrymple Advertiser*, established. Tasmania constituted a colony independent of N.S.W. Establishment of appointed Executive and Legislative Councils. Departure of Governor Darling from Tasmania left Arthur with the authority of Governor (but not the title).
- 1826 Van Diemen's Land Co. sent first party. Appointment of Commissioners of Survey and Valuation.
- 1827 Colonial Act passed for the regulation of the colonial press—disallowed. Lieutenant-Governor received petition for trial by jury and some representation in Legislative Council.
- 1828 Passage of British Act 9 Geo. IV, cap. 83 which increased membership of Legislative Council. Martial law proclaimed against aborigines.
- 1830 George Augustus Robinson began his mission to conciliate the aborigines. First use of juries in civil cases. Beginning of the 'Black Line', the military campaign to round up the aborigines. First volume of *Quintus Servinton*, first novel to be published in Australia. Port Arthur established as a penal settlement.
- 1831 Approval of British Government's new land regulations discontinuing free grants of land, and replacing them with land sales.

- 1832 First shipment of aborigines to Straits islands. Establishment of the Caveat Board to settle land disputes and to confirm titles. Maria Island closed down as a penal settlement.
- 1833 Macquarie Harbour penal settlement closed down.
- 1834 Henty brothers from Launceston became first settlers in Victoria occupying land in Portland Bay area.
- 1835 John Batman sailed from Launceston to Port Phillip as agent for the Port Phillip Association. Tasmania divided into counties and parishes. Opening of Ross Bridge. Population estimated as 40,172 persons.
- 1837 Arrival of Sir John Franklin and assumption of office as Lieutenant-Governor.
- 1838 Sessions of Legislative Council opened to the public.
- 1840 Cessation of transportation to N.S.W. and consequent increase in numbers transported to Tasmania. Population estimated as 45,999 persons.
- 1841 Assignment System of convict discipline replaced by the Probation System. Rossbank Observatory for magnetic and meteorological observations established.
- 1842 Tasmania created a separate Anglican diocese. Hobart made a city. Peak year for convict arrivals (5,329).
- 1843 Recall of Sir John Franklin and succession of Sir John Eardley-Wilmot.
- 1844 Transfer of Norfolk Island penal settlement from N.S.W. to Tasmanian control.
- 1845 Resignation of the 'Patriotic Six' members of the Legislative Council, opposing the heavy expenditure of colonial revenue for Imperial police charges.
- 1846 Recall of Wilmot. Foundation of the Launceston Church Grammar and the Hutchins Schools.
- 1847 Succession of Sir William Denison. The Lieutenant-Governor re-appointed the 'Patriotic Six', dispensing with those who had replaced them as Legislative Councillors.
- 1848 Tasmania now the only place of transportation in the British Empire.
- 1850 Foundation of the Anti-Transportation League. Population estimated as 68,870 persons.
- 1851 British Act 'for the better governing of the Australian colonies' reached Tasmania; provided for limited representative government. First elections for 16 non-appointed members of Legislative Council.
- 1852 First payable gold found near Fingal. Elections held for first municipal councils in Hobart and Launceston.
- 1853 Arrival of last convicts to be transported.
- 1854 Bad floods throughout colony. Passage of Bill establishing responsible government.
- 1855 Succession of Sir Henry Fox Young; title now Governor. British Government approved Constitution Bill.
- 1856 Name of Van Diemen's Land changed to Tasmania. Opening of new bi-cameral Parliament with W. T. N. Champ leading first government in the House of Assembly. Reorganisation of Police Department.
- 1858 Council of Education set up. Rural Municipalities Act passed.
- 1859 Charles Gould appointed to make geological survey of western Tasmania. Telegraph established as link with Victoria.

- 1860 Population estimated as 89,821 persons.
- 1861 Succession of Colonel Thomas Gore Browne. Telegraph cable to Victoria failed.
- 1862 Promotion of scheme for a railway between Launceston and Deloraine.
- 1864 Arrival of first successfully transported salmon ova.
- 1868 Visit by Alfred, Duke of Edinburgh. Bill passed making primary education compulsory.
- 1869 Succession of Charles Du Cane. Death of William Lanne, thought to be last male full-blood aborigine. Death of Sir Richard Dry. New cable laid to Victoria.
- 1870 Withdrawal of remaining Imperial troops. Population 99,328 persons (Census).
- 1871 Opening of Launceston-Deloraine railway.
- 1872 Contract concluded for building Main Line Railway.
- 1873 Main Line Railway construction began. Tin discovered at Mt Bischoff. Start of economic recovery.
- 1874 Riots in Launceston in protest at rates levied for Launceston-Deloraine railway.
- 1875 Succession of Sir Frederick Weld.
- 1876 Race meetings established at Elwick. Gold nugget worth \$12,200 found at Nine Mile Spring. Death of Trugannini, thought to be last female full-blood aborigine. Main Line Railway opened for traffic.
- 1877 Port Arthur closed down as a penal settlement.
- 1878 Increased activity in exploration of West Coast.
- 1879 Settlement of constitutional issue known as the 'Hunt Case'. Rich lode of tin discovered at Mt Heemskirk.
- 1880 First telephone in Tasmania with line from Hobart to Mount Nelson Signal Station.
- 1881 Purchase of three diamond drills by government for hire to private prospectors. Succession of Sir George Strahan. Population 115,705 persons (Census).
- 1882 Increased prospecting on West Coast.
- 1883 Discovery of the 'Iron Blow' at Mt Lyell.
- 1885 Russian war scare followed by activity in improvement of defences. Formation of Mt Lyell Prospecting Association.
- 1886 Adye Douglas, Tasmanian Premier and President of the Federal Council, spoke in favour of Australian republicanism.
- 1887 Succession of Sir Robert Hamilton.
- 1890 Establishment of University of Tasmania.
- 1891 Collapse of Van Diemen's Land Bank; deep economic depression. Population 146,667 persons (Census).
- 1892 Mt Lyell Mining Co. established.
- 1893 Succession of Viscount Gormanston.
- 1896 Establishment of Tattersalls Lottery by George Adams.
- 1897 Record shade temperature of 105.5°F at Hobart on 30 December.
- 1898 Serious bush fires. Polling four to one by Tasmanians in favour of Federation.

- 1899 Departure from Hobart of *Southern Cross* (Borchgrevinck) expedition to Antarctic.
- 1900 Departure of Tasmanian contingents to fight in the Boer War.
- 1901 Proclamation of the Commonwealth read. Polling for first elections to Federal Senate and House of Representatives. Succession of Sir Arthur Havelock. Population 172,475 persons (Census).
- 1903 Celebration of 100 years' settlement cancelled because of smallpox epidemic in Launceston. Suffrage extended to women.
- 1904 Succession of Sir Gerald Strickland at reduced salary.
- 1905 Experiments in wireless telegraphy between Tasmania and the continent and between Tasman Island and Hobart.
- 1906 Visit by Ramsay MacDonald (later British Prime Minister).
- 1907 New Public Library opened; built with gift from Andrew Carnegie.
- 1909 Succession of Sir Harry Barron. Potato crop wiped out by Irish blight. State's first Labor government under John Earle.
- 1911 Population 191,211 persons (Census).
- 1912 Disasterous fire at North Lyell Mine, Queenstown.
- 1913 Succession of Sir William Ellison-Macartney.
- 1914 First aeroplane flight in Tasmania. Departure of first Tasmanian contingent to fight in Great War. Second State Labor government formed under John Earle. Formation of Hydro-Electric Department.
- 1915 Serious bushfires.
- 1917 Establishment of electrolytic zinc works at Risdon and of Snug carbide works. Succession of Sir Francis Newdegate.
- 1918 End of Great War.
- 1919 First export of frozen meat.
- 1920 Visit by Edward, Prince of Wales. Purchase of site for Cadbury's chocolate factory at Claremont. Succession of Sir William Allardyce.
- 1921 Population 213,780 persons (Census).
- 1922 Completion of Waddamana power station.
- 1924 Succession of Sir James O'Grady. First superphosphate manufactured by Electrolytic Zinc Co. at Risdon.
- 1925 Discovery of osmiridium fields at Adamsfield.
- 1927 Enquiry into proposed bridge over Derwent. Visit by Duke and Duchess of York.
- 1929 Serious floods throughout island. Establishment of automatic telephone system in Hobart. Beginning of economic depression.
- 1930 Export prices fell to half 1928 level. Australian pound devalued so that £ sterling equalled £A 1.25 (\$A 2.50).
- 1931 Depression continued—10 per cent cut in Federal basic wage. Initiation of austere Premier's Plan. Conversion loan to reduce rate on internal Federal debt by 22½ per cent. Census of population deferred due to economic crisis.
- 1933 Census of population—Tasmania, 227,599 persons. Succession of Sir Ernest Clark. Commonwealth Grants Commission appointed to enquire into affairs of claimant States.
- 1934 Labor Ministry of A. G. Ogilvie first in 35 years of continuous Labor governments. Second phase of hydro-electric development commenced at Tarraleah and Butlers Gorge.

- 1936 Tasmania linked with Victoria by submarine telephone cable.
- 1937 Epidemic of poliomyelitis. Economic recovery evidenced by \$0.50 'prosperity' loading added to Commonwealth basic wage.
- 1938 Paper mill using native hardwoods established at Burnie. First turbines began operating at Tarraleah power station.
- 1939 Outbreak of World War II.
- 1940 Tasmanians sailed for Middle East with Australian 6th, 7th and 9th Divisions.
- 1941 Newsprint production began at Boyer on the Derwent. Tasmanians sailed for Malaya with Australian 8th Division.
- 1942 Uniform Federal income tax commenced.
- 1943 The floating-arch Hobart Bridge opened for traffic.
- 1944 Pay-as-you-earn income taxation introduced from 1 July.
- 1945 End of World War II. Succession of Sir Hugh Binney.
- 1946 Cessation of man-power controls. Rejection by Legislative Council of bill to grant Federal Government price control powers for three years. Crash of DC3 airliner at Seven Mile Beach with 25 deaths.
- 1947 Census of population—Tasmania, 257,078 persons. Court action to stop bank nationalisation by Federal Government. Demobilisation of forces completed. 'Displaced persons' commenced arriving from Europe.
- 1948 Forty-hour week awarded to most workers from 1 January. Tasmanians voted 'No' almost two to one in referendum denying Federal Government power over prices and rents. State price and rent controls introduced. Legislative Council's denial of supply forced dissolution of House of Assembly—Cosgrove ministry returned to power.
- 1949 Compulsory X-ray introduced in fight against tuberculosis. Clark Dam at Butlers Gorge completed. Theatre Royal purchased by the Government. Port of Hobart held up by 29-day strike; coal supplies cut off by major strike on N.S.W. coalfields and at Tasmanian mines. Sterling devalued by 30.5 per cent and Australian pound similarly devalued.
- 1950 End of Federal petrol rationing. Dissolution of House of Assembly granted by Governor and Cosgrove ministry returned to power. Start of Korean War. Federal basic wage increase of \$2.00 followed by State Wages Boards. Communist Party Dissolution Bill passed by Federal Parliament.
- 1951 Serious bushfires in January and February. Succession of Sir Ronald Cross. Electric power rationing introduced due to prolonged drought. Communist Party Dissolution Act declared invalid by High Court. Double Dissolution of Federal Parliament. Part of Macquarie Harbour frozen over on 2 July. Hobart Federal basic wage increased from \$16.50 (February) to \$19.90 (November). First intake of National Service trainees entered Brighton camp. Referendum to give Commonwealth powers in regard to communism—'No' vote prevailed although Tasmanians expressed slight preference for 'Yes'.
- 1952 Inflation continued—Hobart Federal basic wage rose from \$20.80. (February) to \$23.00 (November). Single licensing authority established for hotels, clubs, etc. First women elected to Hobart City Council. Two women elected to Legislative Council. State free hospital scheme ceased. Rejection by Legislative Council of bill to give State aid to private schools.

- 1953 Inflation continued—Hobart Federal basic wage rose from \$23.20 (February) to \$24.20 (August). In September, Court abandoned system of quarterly adjustment of Federal basic wage. Special Premier's conference discussed return of income tax powers to States but no action followed. Armistice in Korea. State Wages Boards decided to follow Federal Court in suspension of quarterly basic wage adjustments.
- 1954 Royal visit by Queen. Completion of Trevallyn tunnel for hydro-electric power. Menzies government re-elected. Rationing of electric power ended. Census of population—Tasmania, 308,752 persons. State prices control organisation disbanded. Federal Arbitration Court awarded margins based on two and a half times their 1937 level. Bill passed to resolve deadlocks in House of Assembly. Foundation of the Metropolitan Transport Trust.
- 1955 Nubeena suffered damage from tidal wave. Uranium ore discovered at Mt Balfour and Royal George. Bell Bay aluminium plant officially opened. Cosgrove ministry returned to power without effective majority. First women (two) elected to House of Assembly. Australia's first capital city parking meters installed in Hobart. Trevallyn and Tungatinah schemes officially opened. Anti-Communist Labour Party (later D.L.P.) formed in State. Tasmania's first woman mayor (Launceston) elected. Menzies government returned.
- 1956 State Wages Boards' restoration of 'cost-of-living' adjustments effective from 1 February. Watersiders strike at Tasmanian ports for 22 days. Bad floods State-wide in May. Federal Court increased basic wage \$1.00. State granted \$2.60 increase to own employees. State Wages Boards again suspended cost-of-living adjustments. Minister for Housing joined Liberal Party, depriving State Government of its majority. Sir Ronald Cross flew from Colombo and granted dissolution of House of Assembly. Labour returned to power in State. Official opening of E.Z. Co's sulphate of ammonia plant. Centenary of self-government celebrated.
- 1957 Parking meters introduced in Launceston. Legislative Council rejected bill giving aid to private schools. First fall for three years in 'C' series index (March quarter). Federal court increased basic wage \$1.00. Clarence rate-payers voted to replace elected Council with appointed Municipal Commission. First space satellites—Sputniks I and II—seen over State. Keel laid of *Princess of Tasmania*. Commonwealth announced greater financial aid to Universities, following Murray Report. Centenary of Hobart's incorporation celebrated.
- 1958 Unsuccessful agitation by churches and other bodies for re-opening of Orr case. Federal court increased basic wage by \$0.50. Bad floods in Derwent Valley. Establishment of Rivers and Water Supply Commission. Mr Cosgrove succeeded by Mr Reece as Premier. Menzies government re-elected. Public Service Tribunal established as an industrial authority. *Princess of Tasmania* launched. Armed Forces Food Science Establishment commenced operations at Scottsdale.
- 1959 Extensive bushfires. Dissolution of House of Assembly. First election to fill 35 seats in House of Assembly; Labor re-elected. Succession of Lord Rowallan. Federal Court awarded \$1.50 increase in basic wage. New Commonwealth system of grants reduced claimant States to two—Tasmania and Western Australia. *Princess of Tasmania* commenced roll-on roll-off ferry service Melbourne to Devonport. One-way street traffic plan introduced in Hobart. Federal

- Court granted 28 per cent increase in margins. Tender accepted for new bridge across Derwent to be finished in three years. Severe hail damage in Huon Valley.
- 1960 Liapootah power station commissioned. Kingborough Council replaced by Municipal Commission. Zeehan-Strahan railway closed. Inland Fisheries Commission created. First Tasmanian telecast. Federal Court refused basic wage increase. Severe floods in central Hobart and Derwent Valley. In football, Tasmania defeated the V.F.L. Negotiations begun for sale of Commonwealth interest in Bell Bay aluminium plant. Australian 'give way to right' rule introduced. Hobart trams ceased running. *Bass Trader*, a trailer-container vessel, launched.
- 1961 Government initiated plan for bulk water supplies to west bank of Derwent. *Bass Trader* commenced service to Melbourne from northern ports. Population 350,340 persons (Census). Federal Court increased basic wage \$1.20. *William Holyman*, cargo container vessel, entered Bass Strait trade. Matriculation college policy announced. Construction started for Hobart-Sydney ferry terminal. Legislative Council rejected equal pay legislation. Menzies government re-elected.
- 1962 Board of enquiry reported adversely on prospects of thermal power generation in Fingal Valley. Federal Court refused basic wage increase. Catagunya turbines began producing electricity. State Wages Boards granted three weeks' annual leave. Federal grant of \$2,336,000 to Tasmania to stimulate employment. State subsidies announced for municipal fluoridation schemes. Closure of Mt Lyell Railway, Queenstown to Strahan. West Derwent Water Scheme inaugurated; end of metropolitan water shortages.
- 1963 Speed limit in built-up areas increased from 30 to 35 mph. Abolition of State entertainments tax. Succession of Sir Charles Gairdiner. Federal court increased margins 10 per cent and granted three weeks' annual leave. Trans-Derwent ferries ceased operating. Universities Commission recommended medical school for Tasmanian University. Hydro-Electric Commission imposed power cuts on industrial consumers. *Seaway Queen*, trailer and container ship, launched. Menzies government returned with substantial majority.
- 1964 Launching of *Seaway King*. T.A.A. commenced intra-State air services. Launching of *Empress of Australia*. Industrial power cuts ended. Alginate plant began operations on east coast. Labor re-elected at State elections. Federal Court reduced long service leave qualifying period from 20 to 15 years. *Seaway Queen* began Melbourne-Hobart operations. Federal Court increased basic wage \$2.00; rejected total wage concept. Severe flooding in Launceston area. Tasman Bridge opened for traffic and Hobart Bridge towed away. *Seaway King* began Sydney-Hobart operations. State subsidies for electric power in remote localities abolished. Hobart's water supply fluoridated. One-way street scheme introduced in Launceston. Tasmania re-established as separate army command. Glenorchy raised to city status. Compulsory National Service on selective basis introduced.
- 1965 *Empress of Australia* sailed from Sydney on first voyage to Hobart. Provisional driving licences introduced. Contract let to raise Great Lake level by new Miena Dam. Dental nurse scheme for schools announced. Battalion of Australian troops sent to South Vietnam.

D'Entrecasteaux scallop beds closed for 1965 season. New Shops Act extended Saturday morning closing to Hobart's eastern suburbs. Commonwealth Conciliation and Arbitration Commission increased total award wage 1.5 per cent, the rise being credited to the margin, not the basic wage. Report of Municipal Commission recommended reduction of local government authorities from 49 to 20. Australian woolgrowers voted 'No' in referendum on Reserve Price Scheme; Tasmanians voted marginally 'Yes'.

1966 *Freya* won Sydney-Hobart race for the third time; a record. Offshore natural gas discovered at new site in Victorian waters. Mr Holt became Prime Minister. Decimal currency introduced on 14 February 1966. Savage River workers declared eligible for taxation zone allowance. Advanced College of Education announced for Hobart (to cost \$2m). Burnie-Launceston co-axial cable completed. Renison Bell to process tin with Capper Pass fuming method. Hobart gas works used oil after 112 years' production based on coal. Savage River agreements involving \$62m signed. Equal pay for certain females in Public Service contained in State Act. Breathalyser tests approved for use by police. Population 371,435 persons (Census). Commonwealth Conciliation and Arbitration Commission increased basic wage by \$2. Sunday observance dispute; Victorian Q.C. appointed as board of enquiry. Shipping rates to Britain increased 6.4 per cent. State budget lifted commercial vehicle taxation as much as 50 per cent; private vehicle taxation about 15 per cent. Launceston airport's new passenger terminal officially opened. Holt Liberal Government returned to power with record majority; Tasmanian representation remained three A.L.P., two Liberal. S.T.D. extended to Tasmania. Commonwealth Public Service removed marriage bar to female employment. Lake Meadowbank filled. Commonwealth Conciliation and Arbitration Commission, in interim margins case, gave increases based on total wage (ranging from 1 per cent to 2.5 per cent).

1967 *Cadence* won Sydney-Hobart race. Board of enquiry suggested more liberal Sunday observance legislation. Bush fire disaster of 7 February resulted in 62 deaths; first home rebuilt and occupied 18 days after its destruction. Four months to April driest in Hobart since 1840. Senate rejected Federal Government's attempt to raise postal charges. Petition presented against a proposal to flood Lake Peddar as part of Gordon hydro-electric scheme; plan for thermal station at Bell Bay also announced. Federal Arbitration Commission abolished basic wage concept, substituted total wage concept and awarded \$1.00 increase to males and females. Israel defeated Arab nations; closure of Suez Canal. Luina, new 61-home township near Waratah, finished for Mt Cleveland tin mines. State Wages Board in test case gave \$1.00 increase to males and females but retained basic wage concept. Scallop beds in D'Entrecasteaux Channel opened for one month's trial. Hydro-electric water reserves down to 16 per cent due to sustained drought in catchment areas. Cabinet decided to introduce daylight saving legislation to conserve power. Industrial power rationing with 25 per cent cuts to operate from 1 October. Legislative Council consented to bill authorising Gordon River hydro-electric scheme and Bell Bay thermal station. Licensing Act liberalised, drinking age lowered to 20 years, licensed restaurants, etc. introduced. Daylight saving to operate from 1 October. Federal Trade Practices Act operational from 1 October. Savage River iron ore passed as slurry to Port Latta. U.K. devalued pound sterling by 14.3 per cent;

Australia did not devalue. Senate election result in State: two Liberal, two A.L.P., one independent. Bulk electricity supplies cut 35 per cent from 1 December; domestic users to reduce consumption by 20 per cent. Legislative Council defeated price control measure. Deadlock between two Houses resulted in end of legislation controlling shop hours. Arbitration Commission gave work value award in Federal metal trades case; suggestion that increases could be absorbed where over-award payments in operation. Sixty mph driving limit introduced. Australian Prime Minister, Mr Harold Holt, disappeared while swimming off Victorian coast.

1968 *Rainbow II*, winner on handicap, Sydney-Hobart race. Rainmaking experiments made over H.E.C. catchment areas. Royal Hobart Hospital acquired State's first artificial kidney machine. Burnie municipal abattoir lost licence; other rural abattoirs below standard. National postal strike. Mt Lyell Company introduced superannuation scheme for wage-earners. Repulse H.E.C. dam on Lower Derwent completed. Casino promoters put proposal before State Government. Asthma survey of schoolchildren commenced. Bushfires in north-west and north-east. Federal Arbitration Commission in second metal trades work value decision, reduced amounts granted by 30 per cent; restoration to be considered later in year. Federal scheme announced for reconstruction of dairy industry. Mr Gorton won by-election and entered Federal House of Representatives. Savage River iron ore project officially opened. E.Z. Co. announced plans for Burnie sulphuric acid plant. Supreme Court held valid the report of the Municipal Commission. Contract let for H.E.C. Bell Bay thermal plant. Woodchip industry study indicated south suitable. St Leonards council dismissed and administrator appointed. H.E.C. water storages at record low level. Good rains; industrial power rationing to be relaxed to 25 per cent formula from 1 July when other restrictions would cease. Batman Bridge across lower Tamar opened. Federal Government announced subsidies for apples and pears exported to U.K. and other countries which devalued their currency in 1967. Gale damage in north-west with 110 mph winds recorded. Bureau of Census and Statistics installed powerful computer for use by Federal and State Government departments. Tasmanian Public Service Tribunal ruled women teachers entitled to equal pay (by 1972 in stages as prescribed in State Act). Royal Commission reported favourably on fluoridation. Mt Lyell blister copper shipped to Port Kembla (N.S.W.). Open road speed limit of 65 mph imposed. State receipts tax of 1 cent in each \$10 imposed (but wages and salaries exempt). Industrial power rationing to cease from 1 October. Daylight saving to operate in 1968-69 for shortened period. Arbitration Commission increased male and female adult award rates by \$1.35 per week in national wage case. Recount of votes to fill vacancy created in Assembly by death of Mr John Steer, pioneer of Tasmanian daylight saving. H.E.C. storages down to 14 per cent in March, up to 54 per cent in October. Traces of oil and natural gas discovered in Tasmanian part of Bass Strait. Full adult suffrage for Legislative Council elections from 1 July 1969. Legislation passed allowing government loans to drought affected farmers. Succession of Sir Edric Bastyan. Capital punishment abolished. 'Yes' vote prevailed in 'Casino Referendum'; *Wrest Point Casino Licence and Development Bill* passed by Legislative Council in late December.

1969 Sydney-Hobart yacht race: handicap winner *Koomooloo*. Tasmanian Government Railways take over Burnie railway station from Emu Bay Railway Company. Federal Minister for National Development approved east coast woodchip industry. Parangana Dam (Mersey-Forth scheme) completed. East Coast drought. Strikes interrupted T.A.A. air services to Tasmania. Officials inspect newly formed rural fire brigades. Tasmania exempted from nation wide rail strike. Commissioner of Trade Practices cited Tasmanian Breweries Pty Ltd to appear before Trade Practices Tribunal. Sir Paul Hasluck appointed Governor-General of Australia. New A.N.L. roll-on roll-off ferry *Australian Trader* to operate between Melbourne and Northern Tasmanian ports. Mr Reece set record for continuous service as State Premier. Stanley to be port for overseas export of rutile and zircon mined on King Island. Commonwealth Road Grant formula revised; State to receive increased grants. 'Stock and Crop' census forms delivered by mail; previously by police. North-West General Hospital opened at Burnie. Naracoopa Rutile Ltd commissioned processing plant at Naracoopa, King Island; company to mine beach sand for rutile, zircon and other minerals. Federal Government announced grant of \$750,000 for Cressy-Longford irrigation scheme conditional upon acceptance by majority of affected farmers. Hobart's first preservation order taken out on four houses in Battery Point. Hobart water-front strike interrupted fruit exports. Tamar Regional Valley Planning Authority formed. State election results, members returned: 17 Labor, 17 Liberal, one Centre Party; ten sitting members lost their seats. H.E.C. let \$3m contract for Bell Bay thermal power station. Centre Party member, K. O. Lyons, combined with Liberal Party to form Liberal-Centre Party coalition government; end of 35-year Labor rule in Tasmania. Serious flooding in north, north-east and north-west. Fire at Electrola carbide plant; output cut by 60 per cent. Tasmanian company awarded \$3m contract for construction of first stage of Tasmanian College of Advanced Education. Liberal-Centre Party Coalition to legislate for three-year parliament; not to apply to present Parliament. Committee established by Government to Study Launceston Bell Bay rail link. Full Bench of Federal Arbitration Commission granted equal pay to females performing equal work; female salaries to be brought up to male salaries in stages. *Australian Trader* arrived at Devonport on maiden voyage. State and Federal Health Ministers agree to introduce legislation curbing cigarette advertising. 12.39 pm A.E.S.T. 21 July 1969, U.S. Astronaut took Man's first step on lunar surface. State Government established law reform committee. Flooding in Midlands and North Midlands. Hobart City Council agreed to re-zone area at New Town to allow construction of \$3.5m 'K-Mart Discount' store. Cressy-Longford farmers vote in favour of Brumby Creek irrigation scheme. Ironmongers' Wages Board gives substantial increases to retail employees. University to receive \$6.9m and the College of Advanced Education \$3.98m during triennium 1970-72. Legislation proposed for long service leave for casual workers. Regulation imposing severe penalties on the users of stimulants introduced. H.E.C. to 'underground' cables in selected areas of Hobart. Research into the abalone fishery to be undertaken near Maria Island. H.E.C. profit for 1968-69 exceeded \$1.8m. Launceston Teachers College officially opened. Battery Point redevelopment plan leads to criticism of Hobart City Council by National Trust. Gallup Poll indicates that 61 per cent

of Australians are in favour of Daylight Saving. Commonwealth government to construct a 13 storey \$4m office block in Hobart. Narrow Federal election victory to Liberal-Country Party coalition. Tasmanian representation; four A.L.P., one Liberal. Hobart City Council to increase building fees and to act against the owners of sub-standard flats. Kidney transplant operation performed at Royal Hobart Hospital. Trade Practices Tribunal decision challenged in High Court by Tasmanian Breweries Pty Ltd. Softwood production target of 180m super feet per annum announced by Forestry Commission for the Fingal Valley plantations. Gordon River power station diversion tunnel completed. Serious flooding in North-East Tasmania. Stricter penalties for drunken driving introduced. Severe frost damage to Huon apple crop. King Island Scheelite Company Ltd to mine behind an artificial sea-wall; first time attempted in Australia. Summer school course in geology held at the University of Tasmania. Maritime strike disrupts shipping services to Tasmania. 1969 National Wage Case: minimum wage increase \$3.50, all other wages increased by 3 per cent. Tasmanian greasy wool production of 46.96m lb (1968-69), a record. Legislative Council Select Committee to investigate the effect of the introduction of water meters. Second Select Committee enquiry into the Burnie Expressway announced. Feasibility study of the proposed Launceston to Bell Bay rail-link undertaken. Copper smelter at Mt Lyell closed; concentrate to be sent to Japan and Port Pirie (S.A.) for treatment.

1970 *Morning Cloud* winner of Sydney-Hobart yacht race. International Cadet World Championships held on Derwent. University to grant Matriculation 'by compensation'. New \$1m bulk cargo berth completed by Burnie Marine Board. Tasmanian primary schools to begin teaching metric system. Bones of young Tasmanian Aboriginal found near Marrawah on North-West Coast. Port of Strahan used for last time following cessation of copper smelting at Mt Lyell. Sydney archaeologist inspected remains of Wybalenna aboriginal settlement on Flinders Island; excavation of site to commence early in 1971. Matriculation colleges announced for Devonport and Burnie. UNESCO expert strongly urged preservation of Aboriginal rock carvings. Government to provide \$20,000 for bush fire memorial in Kingborough Municipality. Northern branch of Conservation Trust to undertake two-year survey aimed at protecting 'scenic beauty and recreational areas' of the Tamar Valley. Season for deer-shooting reduced by four weeks; licence fee increased from \$1 to \$5. Official opening of Marine Research Laboratory at Tarooma. Comalco (Bell Bay) Ltd became a public company. Broadband telecommunications system established between Smithton and King Island (provides telephone and television relay facilities). Cabinet met at Burnie; only its second meeting outside the Hobart area. Ruling by High Court invalidated large section of the Victorian and W.A. receipts tax acts. Paterson Barracks (one of Australia's oldest military establishments) badly damaged by fire. First pyrites railed from Rosebery to Burnie sulphuric acid plant. Pay increases received by local government employees. Trading Bank lending rates increased by 0.5 per cent to 8.25 per cent. Work commenced at Selfs Point on second stage of Hobart's sewerage treatment scheme. Tenders called by Sea Fisheries Division of the Department of Agriculture for a new patrol and research vessel. Closure of diversion tunnel created a new lake behind the Wilmot dam. Hobart Area Transportation Study being updated. Cabinet established an age

limit of 70 years on members of government boards and authorities (except where specialised knowledge was involved). Historic Dora Turner School at Battery Point destroyed by fire. Cost of proposed four-lane Gorge Bridge in Launceston estimated at almost \$5m. Burnie's new \$80,000 court house, circular in design, opened by Governor. Commercial mutton bird licences increased from \$5 to \$15. Warsaw Philharmonic Orchestra performed in Hobart City Hall. Roman Catholic nun appointed as lecturer in Medicine at University of Tasmania. E.Z. Co. to establish \$6.3m residue treatment plant at Risdon, to be in operation in mid-1971. High Court ruled that the Trade Practices Tribunal is a valid body to make determinations in Tasmania (following challenges by Tasmanian Breweries Pty Ltd). No mining exploration licences to be granted for Macquarie Island (a flora and fauna reserve). Reflectorised number plates introduced. Royal Family tour Tasmania. \$2.5m allocated for buildings at University during 1970-72 triennium. Interest rates on housing loans increased. Forester kangaroo in danger of extinction on Tasmanian mainland. Royal Hobart Hospital celebrated 150th anniversary. Controversy over Hobart City Council election procedures. Penalties under *Tasmanian Oil Pollution Act* substantially increased. National conventions held in Hobart by Lions and Apex service organisations. Record Australian price of \$10,500 paid for Tasmanian Angus stud bull from the Connorville Estate. Commonwealth Government lifted ban on export of Snoek (Barracouta). North-West Acid Pty Ltd plant opened at Burnie. H.E.C. completed 60 ft high coffer dam on Gordon River in four days at the rate of 6 to 8 inches per hour; the 'slipform' process was used for the first time for dam construction in Australia. Oil paintings by convict artist William Gould brought record Australian prices at Launceston auction. H.E.C. to install \$100,000 worth of equipment to improve reliability of electricity supplies to rural areas. Hobart police supplied with portable two-way radios. Australian Medical Association agreed to co-operate with Federal Government in the implementation of the new health scheme. Parliament legislated to introduce permanent daylight saving from the last Sunday in October to the second Sunday in March. Radio station 7LA opened a satellite studio at George Town, the first of its kind in Tasmania. Completion of microwave telecommunications link with W.A. allows direct television relays across the continent; Tasmanians now able to make STD telephone calls to Perth, W.A. Bruny Island ferry service made a loss of almost \$49,000 in 1968-69. Longford isolated by extensive floods. 'Tasmanian Industry Association for Environmental Control' formed to help combat pollution. Tasmania defeated Western Australia football team by two points. Government decided against subsidising an Eastern Shore ferry service. \$6m port expansion plans announced by Hobart Marine Board. Formation of 'crime prevention advisory council' consisting of business, government and industrial interests. All States except Queensland accept principle of reduction in the voting age to 18 years. National television translator station to serve the West Coast commissioned. H.E.C. 'mole', once used for tunnel excavation at Poatina, bought by W.A. prospecting firm. University's neutron monitoring station opened on Mt Wellington, replacing the station destroyed by 1967 bushfires. Telecast of Legislative Council proceedings appeared as part of Australia's first nationwide direct television relay. First shipment of export containers

departed from Hobart on a feeder ship to link up with Australia-Europe container service. Several sightings of the Tasmanian tiger reported. Interstate shipping freight rates increased by 12.5 per cent. Europe-Australia shipping rates also increased by 12.5 per cent. Intra-state road transport rates increased by 10 per cent. Safety device, preventing a car from being started until seatbelts are fastened, invented by Tasmanian. Worst floods for 26 years in Mersey-Forth Valley destroyed houses, roads, bridges, railway lines; damage estimated at over \$3m. Budget speech televised from House of Assembly for first time. Driving licences increased from \$2 to \$5 (pensioners exempt). Moon rock sample displayed at Tasmanian Museum. Salaries of State Parliamentarians increased by 20 per cent. Computer used by Education Department to plan its new social sciences curriculum. Opening of Department of Agriculture's \$1m research laboratories at New Town. Postal charges increased. First double kidney transplant performed at Royal Hobart Hospital. Tasmanian Council of Churches became the first in Australia to admit Roman Catholic Church as full member. Heads of State Government Departments received pay increases of 7-9 per cent. State Premiers accepted Tasmanian formula for Commonwealth reimbursement of revenue in lieu of receipts duty. Tasmania to be first State to introduce teacher training course in speech and drama. Alcohol and Drug Dependency Board reported 4,500 alcoholics in Tasmania. Construction of oil-poppy processing plant commenced at Latrobe. H.E.C. announced \$114m Pieman River Project and a second oil-fired thermal station for Bell Bay. Parliament again rejected proposal for TAB in Tasmania. New legislation introduced severe penalties for drug trafficking and possession. Board of inquiry into Tasmanian fruit industry recommended a single marketing authority for export apples and pears. Kidney from Tasmanian donor flown to Melbourne for transplant. Trade Practices Tribunal ruled against price-fixing agreements between two Tasmanian carton manufacturers. Completion of Removal of Garden Island (ten acres) from Tamar River shipping channel enables larger vessels to enter river.

(See 'Appendix B' for 1971 Chronology)

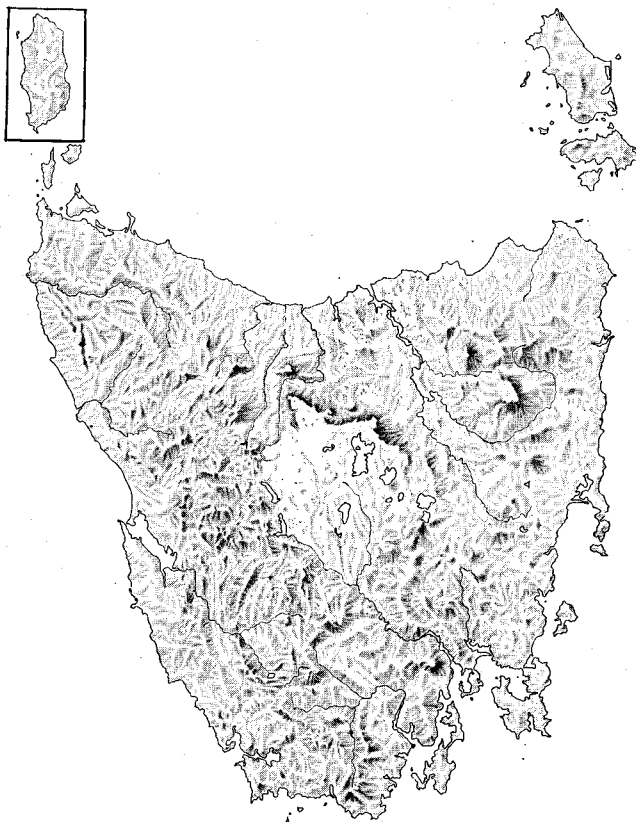
Chapter 2

PHYSICAL ENVIRONMENT

GENERAL DESCRIPTION

Location and Area

The State of Tasmania is a group of islands lying south of the south-east corner of the Australian continent; the major island is called Tasmania and the more important of the lesser islands include King, Flinders and Bruny. Roughly heartshaped with the greatest breadth in the north, Tasmania extends from $40^{\circ} 38'$ to $43^{\circ} 39'$ South latitude and from $144^{\circ} 36'$ to $148^{\circ} 23'$ East longitude. All the coastline lies in the Southern Ocean except in the north where Bass Strait separates the island from the Australian continent by approximately 150 miles.



Relief Map

The area of the whole State, including the lesser islands, is 26,383 square miles or about 0.9 per cent of the area of the Australian Commonwealth (2,967,909 sq. miles); it is just under one-third the size of Victoria, the smallest continental State.

Australia, extending as it does well north of the Tropic of Capricorn and with much of its area in the zone of the sub-tropical anti-cyclones, is basically a warm, dry continent. Tasmania is in the temperate zone and practically the whole island is well watered with no marked seasonal concentration; there are no deserts or drought areas as found extensively on the adjacent continent. Because Tasmania is the most southern State of the Commonwealth, there is a tendency to think of it as being close to the Antarctic but its latitude is matched, in the northern hemisphere, by that of Marseilles (France) and Boston (U.S.A.). In addition, as Tasmania is an island it is sheltered from the extremes of heat and cold experienced in these two centres. The effect of its insular position is illustrated by the variation between summer and winter mean temperatures in coastal towns—this rarely exceeds 15°F. Comparing Hobart (Tasmania) with Melbourne (Victoria), mean maxima are some 6° warmer and mean minima 3° warmer in the Victorian capital which enjoys slightly more sunlight being subject to less fog.

Apart from the Great Dividing Range in the east, Australia is predominantly a land of low plateaux and plains with little relief. By way of contrast, Tasmania could legitimately be called the island of mountains, since it has the largest proportion of high country in its total area when compared with the other States. The distinctive feature of the island is not so much the size of the mountains—few exceed 5,000 feet—but rather the frequency with which they occur. The British Admiralty Pilot Book describes Tasmania as 'probably the most thoroughly mountainous island on the globe.'

Population Distribution

With a population of about 395,000, Tasmania is still thinly populated although its density of 15 persons per square mile is exceeded only by Victoria among the Australian States. Asian comparisons are Japan, 717 persons per square mile; Mainland China, 199; Indonesia, 202.

A marked characteristic of the continental States of the Commonwealth is the very high concentration of population in their respective metropolitan areas, Brisbane providing the only example where this concentration falls below 50 per cent of the State's total population. In contrast, the Tasmanian population is concentrated in two main areas: (i) Urban Hobart, with about 32 per cent; and (ii) Urban Launceston with about 16 per cent. This deviation from an Australian pattern is partly explained by the relative proximity of Launceston to the principal mainland markets, a factor also operating in favour of the north-western urban centres of Burnie-Somerses and Devonport which together now contain about 9 per cent of the State's population. As might be expected with an island, the main centres of population have grown up around ports.

Economic Development

In the nineteenth century, the basic economic activities were farming, mining, forestry and fishing (with whaling of prime importance in the first half of the century). In the twentieth century, evolution of secondary industry was at first inhibited by two major factors—the small local island market and the relative advantage enjoyed by competitors located closer to the principal markets. There were, however, two geographical features of the

island which could be utilised to offset these disadvantages, namely a mountainous terrain and an assured rainfall. Taken together, these two factors mean cheap electric power (if the necessary investment is made in dams and generating stations), for it has been estimated that Tasmania has at least 50 per cent of the total Australian hydro-electric potential. In the last three decades, the State Hydro-Electric Commission has developed a generating system such that the turbines now in use generate 1.32 million kilowatts, and work is still proceeding on harnessing fresh sources. Development of the Gordon River power potential is in an advanced stage and with completion of this scheme in 1975 total generating capacity will be increased to almost 1.7 million kilowatts. The abundance of cheap electric power has led to the establishment of a number of major industrial plants and has transformed the island's economy, which was once heavily dependent on primary industry.

An island, by definition, can suffer from isolation and there is little doubt that Tasmania has been handicapped by transport difficulties. Two developments are now operating to minimise the effects of isolation—regular and frequent air services and roll-on roll-off ferries. The pure-jet air service puts a Tasmanian traveller down in Melbourne in one hour's flying time or less from Hobart, while cargoes are air-freighted daily. Roll-on roll-off vehicle ferries are playing the part of a bridge and are carrying tourist cars and loaded road freighters interstate from the Tasmanian ports of Hobart, Launceston, Devonport and Burnie; the main terminal is Melbourne but a similar direct Sydney link also operates.

Origin of Population

Apart from natural increase, the chief source of the island's population has been the British Isles. At the Census of 30 June 1966, 96 per cent of the people in the State were recorded as having been born in Tasmania, other parts of Australia, the British Isles and New Zealand. The other main countries of birth were the Netherlands, Germany, Poland, Italy, Yugoslavia and Greece, in that order. The Census also showed 71,000 persons with a Tasmanian birthplace on the Australian mainland, but only 33,000 persons with a mainland birthplace in Tasmania; the long-term tendency has been for the migration of Tasmanians to the other Australian States to exceed the migration of 'mainlanders' to Tasmania.

PHYSIOGRAPHY

Introduction

Tasmania is an island of mountains and is unique among Australian States in being predominantly influenced by polar maritime air masses. From the point of view of settlement and development, these two factors have combined to create assets against which must be weighed certain liabilities. The island, a mere 180 miles from north to south and 190 miles from east to west, has a wide variety of mountains, plateaux and plains, of rivers, lakes and tarns, of forest, moorland and grassland, of towns, farms and uninhabited (and virtually unexplored) country. The temperate maritime climate partly explains Tasmania being called the most English of all States but other factors operate to heighten the comparison—the pattern of agricultural settlement with orchards, hedges and hopfields; the Lake Country; the early freestone architecture still common in the east; the roads and villages dotted with oaks, elms and poplars. Nature and the early settlers have provided the assets for a flourishing tourist industry which is currently being vigorously developed.

Assured rainfall and mountain storages have also given birth to massive development of hydro-electric power and, indirectly, to industry. The growth of forests, too, is promoted by suitable factors of rainfall and temperature, and this forms the basis for industries such as timber-milling and newsprint and other paper production.

The mountainous nature of the island is confirmed by survey which shows six features exceeding 5,000 feet, 28 exceeding 4,000 feet and a further 28 exceeding 3,000 feet. The highest mountain is Mt Ossa (5,305 feet) some ten miles north-west of Lake St Clair, and north-west again from this peak lie Mt Pelion West (5,100 feet), Barn Bluff (5,114 feet) and Cradle Mountain (5,069 feet); the furthest distance, fifteen miles, is from Mt Ossa to Cradle Mountain. In the Ben Lomond area, the principal features are Legges Tor (5,160 feet) and about six miles south, Stacks Bluff (5,010 feet). Each of these mountainous regions and a number of others have been set aside as National Parks, two of which, Ben Lomond and Mt Field, are renowned for winter sport.

Water Resources and Rainfall

Fresh water navigation has played very little part in Tasmania's development, the rivers being too fast-running, shallow or short. Of the four major ports, three are located on tidal estuaries—Hobart on the Derwent; Launceston on the Tamar; Devonport on the Mersey (Burnie has built a port on the open sea protected by breakwaters). Rivers, however, are significant in the Tasmanian scene for three reasons: (i) use of headwaters for electricity generation; (ii) domestic and industrial water supply; (iii) irrigation. Hobart for example draws much of its water supply direct from the upper Derwent River without use of a dam and the flow is adequate to serve a population at least ten times greater than that at present. The development of hydro-electric power has been based on full utilisation of the sources and tributaries of the Derwent with a chain of power houses stretching from Poatina on the Great Lake to Meadowbank only 32 miles from Hobart. At Launceston, too, the waters of the South Esk have been harnessed at Trevallyn. In the north-west, the Mersey-Forth Scheme exploits the Fisher, Mersey, Wilmot and Forth Rivers in a development spread over approximately 800 square miles. This does not exhaust the possibility of future development as work on the Gordon-Serpentine (south-west) and Pieman River (West Coast) systems is proceeding and preliminary assessments of other areas are being carried out.

The exceptional drought experienced in some areas from 1967 until early 1969 does not invalidate the general truth of previous statements about assured rainfall. However, to obtain a true perspective, it should be appreciated that large areas of the State cannot be cultivated because there is too much rainfall (in contrast with the mainland of Australia where often the reverse situation applies). Further, the mountainous terrain and accompanying highland climate have restricted farming to relatively small areas of suitable country, mainly river valleys, coastal plains and the lower plateaux. In 1970, farm statistics showed that 39 per cent of the State's area was occupied by rural holdings. Only 3.7 per cent of the area of rural holdings was under crop and a further 30.6 per cent under clover and grasses (other than native). The remaining 65.7 per cent of rural holdings included bush runs, uncleared scrub or possibly land unsuitable for any rural purpose at all. A high proportion of the State's area not included in rural holdings is composed of forests, national parks and lakes.

Population Centres

The distribution of the State's population is largely influenced by factors of terrain and climate. A convenient way to summarise the present pattern of settlement is to imagine three circles of 25 mile radius centred on Hobart (representing the south-east), Launceston (the north) and Ulverstone (the north-west): (i) with Hobart as centre, 42 per cent of the Tasmanian population is located within the 25 mile circle; (ii) with Launceston as centre, 21 per cent; (iii) with Ulverstone, 18 per cent. Since all circles are exclusive of each other, these three defined areas together contain more than 81 per cent of the State's population and this fact justifies the generalisation that the main settlement is in the south-east, the north and the north-west. Residual population not included in the three defined areas is mainly located in the more distant north-west and north-east, in the midlands between Hobart and Launceston, on King and Flinders Islands and along the east coast. Even a 50-mile circle with Queenstown as centre includes only three per cent of the State's population and here the activity is mining, not farming, since this is predominantly an area of high mountains and heavy rainfall. The south-west is completely uninhabited except for isolated prospectors and hydrographic survey parties and the central plateau, where the main activities are summer grazing and hydro-electric power generation, is very sparsely populated.

Physiographic Regions

To explain this particular pattern of settlement, it is necessary to isolate the various physiographic regions of the State as follows:

Central Plateau: The main feature is a relatively undissected, dolerite-capped plateau sloping generally south-eastward from an average level of 3,500 feet in the north to 2,000 feet in the south, and drained almost wholly by the Derwent system. The northern and eastern boundaries of the Plateau are the Great Western Tiers (paradoxically named since they lie in the central north of the island). This is known as the Lake Country of the island and is the chief source of hydro-electric power.

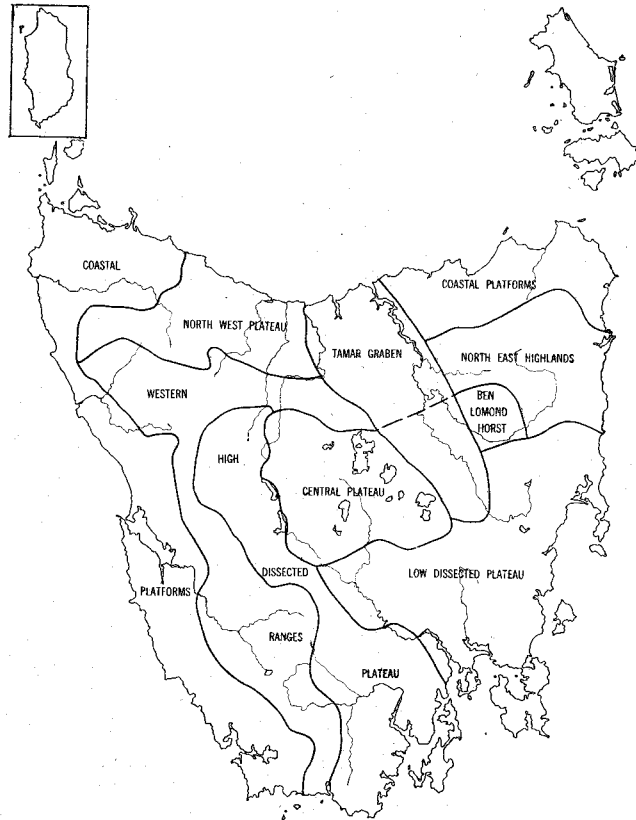
High Dissected Plateau: West of Lake St Clair, the dolerite caps steeply-tilted sediments and the plateau is much dissected; it is formed of a series of peaks and broken ridges. The coastlands in the extreme south of the region are rugged but in the D'Entrecasteaux Channel and Huon River areas, narrow coastal belts have been devoted to specialised agriculture.

Western Ranges: The high dissected plateau is bounded by a mountainous series of ranges running parallel to the west coast and in this region are located the principal mines of the State. The south of the region is completely uninhabited except for construction workers on the Gordon power scheme.

Western Coastal Platforms: Throughout almost the entire length of the west coast, an uplifted and much dissected peneplain slopes westward from about 900 feet to end abruptly in cliffs more than 100 feet high. In the south of this region, superhumid button grass plains predominate, and the area is uninhabited. On the coastal plain south of the Arthur River, however, dairy cattle are wintered on agistment runs while north of the river dairying begins to appear and swamps formed by recent emergence have been cleared for farming.

North-West Plateau: North of the Western Ranges lies a plateau averaging nearly 2,000 feet and important mainly for forestry; the coastlands derive mainly from basalt, giving rise to intensive mixed farming based on dairying, potatoes and crops for canning and freezing, such as peas and beans.

PHYSIOGRAPHIC REGIONS



(The above regions derive from a classification by J. L. Davies, M.A., Ph.D., University of Tasmania.)

Tamar Graben: This graben (rift valley) is the largest plain and the leading agricultural and pastoral district in the State; it ends in the drowned inlets of the Tamar and Mersey estuaries and Port Sorell in the north.

North-East Coastal Platforms: This region consists of undulating lowland but the soils are acid and the land is used only for grazing.

North-East Highlands and Ben Lomond Horst: This region comprises mostly uplifted remnants of old fold mountains dominated by the 5,000 foot dolerite-capped plateau horst of Ben Lomond, an outlier of the Central Plateau. Here agriculture is largely confined to small basalt-derived basins, and some minerals are worked.

Low Dissected Plateau: In the south-east lies a low dissected dolerite plateau averaging perhaps 1,200 feet and used mainly for grazing. The northern coastlands of this region are narrow and also devoted to sheep, but the southern coastland is important for its specialised agriculture. At the extreme south of the region is the drowned estuary of the Derwent and the Tasman and Forestier Peninsulas.

DESCRIPTION OF STATISTICAL DIVISIONS

Introduction

Earlier the State of Tasmania was briefly described by analysing its terrain into nine physiographic regions. For statistical purposes, the State is analysed in divisions but these do not necessarily coincide with physiographic regions. They have been evolved empirically, mainly on the basis of affinity of type of rural production or identity of economic interest. For obvious reasons of convenience and simplicity, statistical divisions are built generally from *whole* municipalities and this fact alone will largely explain the divergence of the statistical divisions from the physiographic regions. Two examples will suffice: (i) Esperance Municipality is included in the Southern Division; only the eastern coastlands of the municipality are settled, the balance lying in the uninhabited south and south-west of the island; thus, due to the relatively large area of Esperance Municipality, the Southern Division not only includes the hop and fruit growing areas of the Derwent, Huon and Channel districts but also Port Davey and Lake Pedder in the remote west; (ii) Deloraine Municipality extends into at least three physiographic regions: the Tamar Graben, the Western Ranges and the Central Plateau. For statistical purposes, it is grouped with other municipalities in the North Western Division.

Statistical Divisions

In subsequent chapters, data for the State will frequently be given in terms of statistical divisions and the following briefly describes each (with population estimated for 30 June 1970):

(1) *Hobart Division*: On the Derwent Estuary, the cities of Hobart and Glenorchy, Clarence Municipality and *portions* of the municipalities of Kingborough, New Norfolk, Brighton and Sorell form this division. It is contained in the approximate quadrilateral New Norfolk—Pontville—Carlton River mouth—Snug, the boundaries having been drawn to encompass all future urban extensions of the main inner area over a period of 20 or 30 years. The division contains the State capital and a number of large industrial undertakings, with a major port located at Hobart. (Population, 150,910.)

'Urban Hobart' lies at the centre of the Hobart Division, of which it forms part; it comprises the *densely settled contiguous parts* of the cities of Hobart and Glenorchy and of the municipalities of Clarence and Kingborough. (Population, 127,260.) The boundaries of urban Hobart and the Hobart Division do not conform with borders defining local government areas. (The details of these boundaries are given in Chapter 5, 'Demography', under 'Population Centred on Hobart'.)

(2) *North Central Division*: This comprises the City of Launceston only; the suburban areas of the five surrounding municipalities are *not* included. (Population, 36,620.)

'Urban Launceston' is an area corresponding, in concept, with Urban Hobart and comprises the City of Launceston and the *suburban* portions of the bordering municipalities of Beaconsfield, St Leonards, Lilydale, Westbury and Evandale. (Population, 62,500.)

(3) *North Western Division*: The constituent municipalities are King Island, Circular Head, Wynyard, Burnie, Penguin, Ulverstone, Kentish, Devonport, Latrobe and Deloraine. In general, the division extends north from the Pieman River mouth in the west, then along Bass Strait to the east of Port Sorell. Rainfall in the division is generous—from 40 to 50 inches near

the shore-line to 60 or 70 inches on the higher country inland. The area is cut into sections by rivers discharging into Bass Strait, the chief being the Mersey, Forth, Leven, Blythe, Cam, Inglis, Black, Duck, and Montagu.

It has large tracts of fertile soil which, together with good rainfall and a mild climate, account for relatively dense settlement and an ascendancy in dairying, beef-cattle farming, potato growing and production of crops for canning and snap-freezing (e.g. green peas and french beans). The division is making extensive use of its timber resources, not only for sawmilling but for large undertakings producing fine writing and printing paper, parchment and other special papers, woodchips and hardboard.

The two main ports of the division are Burnie and Devonport, the latter being the main terminal for a roll-on roll-off ferry service to Melbourne; urban development has not been confined to these two centres, however, and the coast road along Bass Strait runs through a number of townships serving the rural hinterland. (Population, 93,390.)

(4) *North Eastern Division*: The constituent municipalities are Beaconsfield, George Town, Lilydale, Scottsdale, Ringarooma, Portland, Fingal and Flinders. In general, the division extends from east of Port Sorell along Bass Strait, then south along the Tasman Sea as far as the Denison River.

In terms of terrain, the division exhibits wide variety, including as it does the Tamar Estuary, the north-east coastal plains and the north-east highlands. In the Tamar Valley from Trevallyn to the sea, the average rainfall is about 30 inches; elsewhere it varies from 30 inches on the coastal plains to 60 inches on some of the highlands. The rivers in the division, apart from the Tamar and South Esk, are mostly small; the Piper, Brid, Big Forester, Little Forester and Ringarooma flow into Bass Strait while the Mussel Roe, Anson, George and Scamander flow into the Tasman Sea.

Along the Tamar Estuary, the main activities are orcharding and metallurgical refining; elsewhere the principal industries are farming, dairying, grazing, sawmilling and woodchip production.

The main ports for the division are those on the Tamar Estuary, including Launceston, Beauty Point and Bell Bay, the last being the outlet for metallurgical refinery products, including aluminium, from plants at George Town. In considering the population of the division it should be taken into account that approximately 28 per cent is located in *suburban* portions of Beaconsfield and Lilydale municipalities adjacent to Launceston. (Population, 37,850.)

(5) *North Midland Division*: The constituent municipalities are St Leonards, Evandale, Longford and Westbury. Lying between the Western Tiers and Ben Lomond, the heart of the division contains the largest area of level land in the island and is thought to have its origin in two vast freshwater lakes of an earlier era. The ancient lake-bed soils were easily worked by the early settlers and the area became the island's main centre for cereal crops; cereal crop growing is still practised extensively but the rich grazing potential of the land is also being exploited. Rainfall varies from 40 inches in the west to 25 inches in the south; the chief rivers are the North and South Esk, the Meander and the Macquarie.

In considering the population of this division it should be taken into account that about 54 per cent is located in *suburban* portions of St Leonards, Westbury and Evandale municipalities adjacent to Launceston. (Population, 27,060.)

(6) *Midland Division:* The constituent municipalities are Bothwell, Hamilton, Campbell Town, Ross and Oatlands. In the west are the Central Plateau and Lake Country, generally at an elevation that allows only limited summer grazing. To the east is a lower dissected plateau where more sheep are grazed than in any other division. Rainfall varies from 80 inches in the extreme west to almost as low as 20 inches in the east and south. The principal rivers in the sheep belt are the Macquarie, Elizabeth and Clyde; the division also contains the western source and upper waters of the Derwent. (Population, 9,660.)

(7) *South Eastern Division:* The constituent municipalities are Glamorgan, Spring Bay, Sorell (*part*), Richmond, Brighton (*part*) and Green Ponds. The division includes the east coast from the Denison River south to Forester Peninsula and extends inland north of the Derwent opposite New Norfolk (but totally excludes Clarence Municipality). Its partitioned municipalities—Sorell and Brighton—have small areas included in the Hobart Division. In the west of the division, rainfall is as light as twenty inches with slightly more in the east. There is good farmland in the area north of the Derwent but, taken as a whole, the division is mainly devoted to grazing, although a large-scale woodchip industry commenced production during 1971. (Population, 6,920.)

(8) *Southern Division:* The constituent municipalities are Esperance, Port Cygnet, Huon, Kingborough (*part*), New Norfolk (*part*), Bruny and Tasman. Its partitioned municipalities—Kingborough and New Norfolk—have areas included in the Hobart Division. The division includes the Derwent Valley, the Huon Valley and the D'Entrecasteaux Channel district as well as Bruny Island and Tasman Peninsula; the western half is uninhabited. Rainfall in the west approaches 60 inches or more, in the Huon and Channel districts 35 inches and in the lower Derwent Valley 25 inches or less. The main rural industries are concentrated on hops, orchards and small-fruits while exploitation of timber is important, not only for sawmilling, but also for the mills at Boyer and Geeveston where native hardwoods are converted to paper pulp. The main port used by the division is located at Hobart with Port Huon used seasonally for the export of fruit. (Population, 17,810.)

(9) *Western Division:* The constituent municipalities are Waratah, Zeehan, Gormanston, Queenstown and Strahan. The division reaches south from the mouth of the Pieman River to Port Davey and extends east almost to Lake St Clair. Agriculture plays virtually no part in this area of heavy rainfall and rugged mountains. In a division where rain is measured in feet rather than inches, it is difficult to generalise but 30-year averages for individual stations are as follows: Gormanston, 120 inches; Lake Margaret, 142 inches; Queenstown, 99 inches; Waratah, 89 inches; Zeehan, 97 inches. Considering the mountainous terrain and abundant rainfall, it is not surprising that the island's largest river, the Gordon, should flow in this division, discharging into Macquarie Harbour; the Pieman River to the north is almost as big. The only port—Strahan on Macquarie Harbour—is approached through a narrow rocky entrance called Hells Gates; strong currents and a sand bar are additional navigational hazards.

Settlement in the division is mainly related to mining since this is the island's richest mineral-bearing tract, the chief minerals being copper, zinc, silver-lead, tin and iron ore.

The main population concentrations are in and around Queenstown, Rosebery, Zeehan and Strahan. (Population, 11,590.)

Former Statistical Divisions

The Statistical Divisions just described are those employed to classify data from the 1966 Census of Population. Prior to the Census, the cities of Hobart and Glenorchy were combined and called the South Central Division. The revised classification does away with this grouping and substitutes the Hobart Statistical Division, an area much larger than the South Central Division.

ADMINISTRATION AND AREA OF STATE**Sovereignty**

Tasmanian sovereignty covers an area bounded by the approximate rectangle 39°12' to 45° South latitude and 145° to 150° East longitude.

Since the boundary line between Tasmanian and Victorian sovereignty is defined as 39°12' South latitude, numerous Bass Strait islands, the chief being the Furneaux group, King Island and the Hogan, Curtis and Kent groups, are part of Tasmania. In effect some Tasmanian territory (Rodondo and West Moncoeur islands) is located only eight to ten miles from the Victorian coast.

The proclamation of 39°12' South latitude as the northern boundary of Tasmanian sovereignty dates from 1825 when Van Diemen's Land became a colony distinct from New South Wales. Subsequent State mining legislation has followed the limits of the 1825 proclamation and Tasmania claims mining jurisdiction over Bass Strait as far north as 39°12' South latitude.

Macquarie Island, site of an Antarctic Research Station and situated in 54° South latitude, is a Tasmanian dependency and its area is included in Esperance, a State coastal municipality.

Area of Major and Minor Islands

The official area of the State of Tasmania (based on the 1963 survey) is 26,383 square miles (16,885,000 acres). Before this date an estimate made in 1907 indicating an area of 26,215 square miles (16,778,000 acres) was accepted.

The State is composed of 49 local government areas (cities and municipalities) and three of these are either islands or groups of islands and the following table shows the area of these 'island municipalities'.

**Area of Island Municipalities
(Sq. Miles)**

Municipality										Area
Bruny	..	..	..	..	..	..	..	..	..	139.80
King Island	..	..	..	..	..	..	..	..	..	424.40
Flinders	..	..	..	..	..	..	..	..	..	768.93
Total	..	..	..	..	..	..	..	..	..	1,333.13
Remaining Municipalities and Cities	..	..	..	..	..	..	..	..	..	25,049.87
Grand Total	..	..	..	..	..	..	..	..	..	26,383.00

While the 'island municipalities' include the bulk of the lesser islands forming part of the State, some islands are still included in the area of coastal municipalities, e.g. Maria Island in Spring Bay Municipality. Macquarie Island, site of an Antarctic Research Station and situated in 54° South latitude, is a Tasmanian dependency and included in the Esperance Municipality; the island is 21 miles long with an average width of two miles.

Area of Municipalities and Cities

In the table that follows, the measured area of the State (16,884,971 acres or 26,382.76 sq. miles) has been rounded, in total, to the nearest 1,000 acres and to the nearest sq. mile. The corrections necessary to reconcile to the rounded totals have been made by adjusting the area of Esperance, the largest municipality. Where municipal boundaries lie in the sea, these have been disregarded so that the stated area relates to a physical boundary (i.e. the coastline) and not to a legal boundary (which may lie in a seaway or estuary.)

Area of Statistical Divisions and Local Government Areas

Local Government Area and Statistical Division	Area		Local Government Area and Statistical Division	Area	
	Acres	Sq. Miles		Acres	Sq. Miles
Hobart (H) (a) ..	19,728	30.82	Beaconsfield ..	157,628	246.29
Glenorchy (H) (a) ..	29,593	46.24	Fingal ..	674,953	1,054.61
Clarence (H) ..	62,075	96.99	Flinders ..	492,115	768.93
Brighton (SE) (H) ..	108,905	170.16	George Town ..	161,614	252.52
Glamorgan (SE) ..	379,325	592.70	Lilydale ..	168,987	264.04
Green Ponds (SE) ..	102,827	160.67	Portland ..	390,783	610.60
Richmond (SE) ..	140,391	219.36	Ringarooma ..	403,238	630.06
Sorell (SE) (H) ..	193,199	301.87	Scottsdale ..	319,143	498.66
Spring Bay (SE) ..	277,195	433.12			
Bruny (S) ..	89,476	139.80	Total NE. Div. ..	2,768,461	4,325.71
Esperance (S) (b) ..	1,528,586	2,388.61			
Huon (S) ..	191,306	298.92	Evandale ..	244,513	382.05
Kingborough (S) (H) ..	87,682	137.00	Longford ..	246,506	385.17
New Norfolk (S) (H) ..	325,121	508.00	St Leonards ..	220,202	344.06
Port Cygnet (S) ..	59,385	92.79	Westbury ..	223,390	349.05
Tasman (S) ..	118,570	185.27			
			Total N. Midland Div. ..	934,611	1,460.33
Total—Hobart Div. ..	238,067	371.98			
SE. Div. ..	1,156,655	1,807.27	Bothwell ..	644,463	1,006.97
S. Div. (c) ..	2,318,642	3,623.07	Campbell Town ..	354,714	554.24
			Hamilton ..	1,445,459	2,258.53
Launceston (a) ..	6,974	10.90	Oatlands ..	380,520	594.56
			Ross ..	306,488	478.89
Total N. Central Division ..	6,974	10.90			
			Total Midland Div. ..	3,131,644	4,893.19
Burnie ..	152,647	238.51			
Circular Head ..	1,215,094	1,898.58	Gormanston ..	709,627	1,108.79
Deloraine ..	720,687	1,126.07	Queenstown ..	34,973	54.65
Devonport ..	28,696	44.84	Strahan ..	922,355	1,441.18
Kentish ..	293,436	458.49	Waratah ..	669,373	1,045.90
King Island ..	271,615	424.40	Zeehan ..	742,009	1,159.39
Latrobe ..	135,608	211.89			
Penguin ..	106,712	166.74	Total W. Div. ..	3,078,337	4,809.91
Ulverstone ..	126,342	197.41			
Wynyard ..	200,772	313.71			
			Total Tasmania(d)	16,885,000	26,383.00
Total NW. Div. ..	3,251,609	5,080.64			

(a) City.

(b) Measured area is 2,388.37 sq. miles (1,528,557 acres).

(c) Measured area is 3,622.83 sq. miles (2,318,613 acres).

(d) Measured area is 26,382.76 sq. miles (16,884,971 acres).

At the 1966 Census, new definitions based on high population density were employed to fix the boundaries of urban areas. The two major centres in the State, with boundaries conforming to the definitions, were: (i) Urban Hobart (40.2 sq. miles); and (ii) Urban Launceston (26.6 sq. miles). (See Chapter 5 for definition of these areas.)

Area of Tasmania and Other Australian States

The following table compares the area and length of coastline of Tasmania with those of other Australian States and Territories:

Australia: Areas and Coastline of States and Territories

State or Territory	Area	Proportion of Total Area	Coastline	Area per Mile of Coastline
	sq. miles	per cent	miles	sq. miles
Tasmania	26,383	0.89	(a) 900	29
New South Wales	309,433	10.43	(b) 700	443
Victoria	87,884	2.96	680	129
Queensland	667,000	22.47	3,000	222
South Australia	380,070	12.81	1,540	247
Western Australia	975,920	32.88	4,350	224
Northern Territory	520,280	17.53	1,040	500
A.C.T.	939	0.03	..	..
Mainland	2,941,526	99.11	11,310	260
Australia	2,967,909	100.00	12,210	243

(a) Excludes coastline of islands totalling at least a further 500 miles.

(b) Includes coastline of Jarvis Bay which is part of Australian Capital Territory.

CLIMATE OF TASMANIA

Introduction

Since Tasmania lies between 40° and $43\frac{1}{2}^{\circ}$ south of the Equator and is an island with no point more than 70 miles from the sea, its climate is classified as temperate maritime. On the coast the daily temperature range averages about 10°F , but inland the range is almost doubled, indicating a slight continental effect.

The combination of mountainous terrain in the western half of the State and prevailing westerly winds produces a marked west-east variation of climate, and especially of rainfall.

Summers are mild and characterised by greatly lengthened days. The sun reaches a maximum elevation of $70-73^{\circ}$ in mid-summer, giving 15 hours of daylight in the north and $15\frac{1}{2}$ hours in the south. In mid-winter, the sun's elevation does not exceed $20-23^{\circ}$, and the shortest day consists of $9\frac{1}{4}$ hours of daylight in the north, falling to slightly under nine hours in the south.

In winter, westerly winds reach their greatest strength and persistence, causing a distinct maximum in rainfall distribution in the west and north-west. In the east and south-east, rainfall is more evenly distributed over the year. Coastal areas of Tasmania enjoy relatively mild winters as compared with, say Boston (U.S.A.) which is about the same latitude north.

Winds

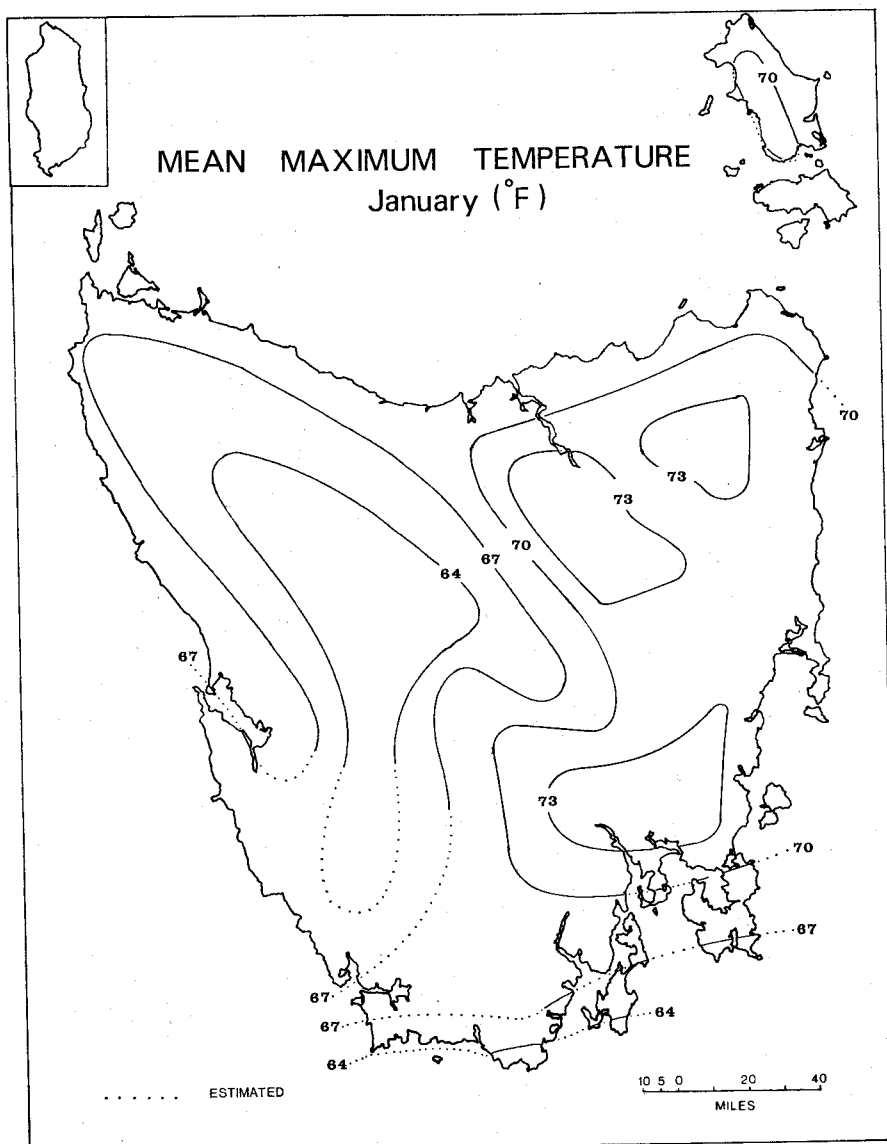
The prevailing winds over most of the island are north-west to south-west, with greatest strength and persistence during late winter. Speed and direction vary with the eastward passage of high and low pressure systems. In the summer months, when westerlies are weak, afternoon sea-breezes become the predominant wind in coastal areas. Occasional periods of north-east to south-east winds occur.

The highest average wind speeds are associated with extensive deep depressions over ocean areas south of Tasmania.

Temperature

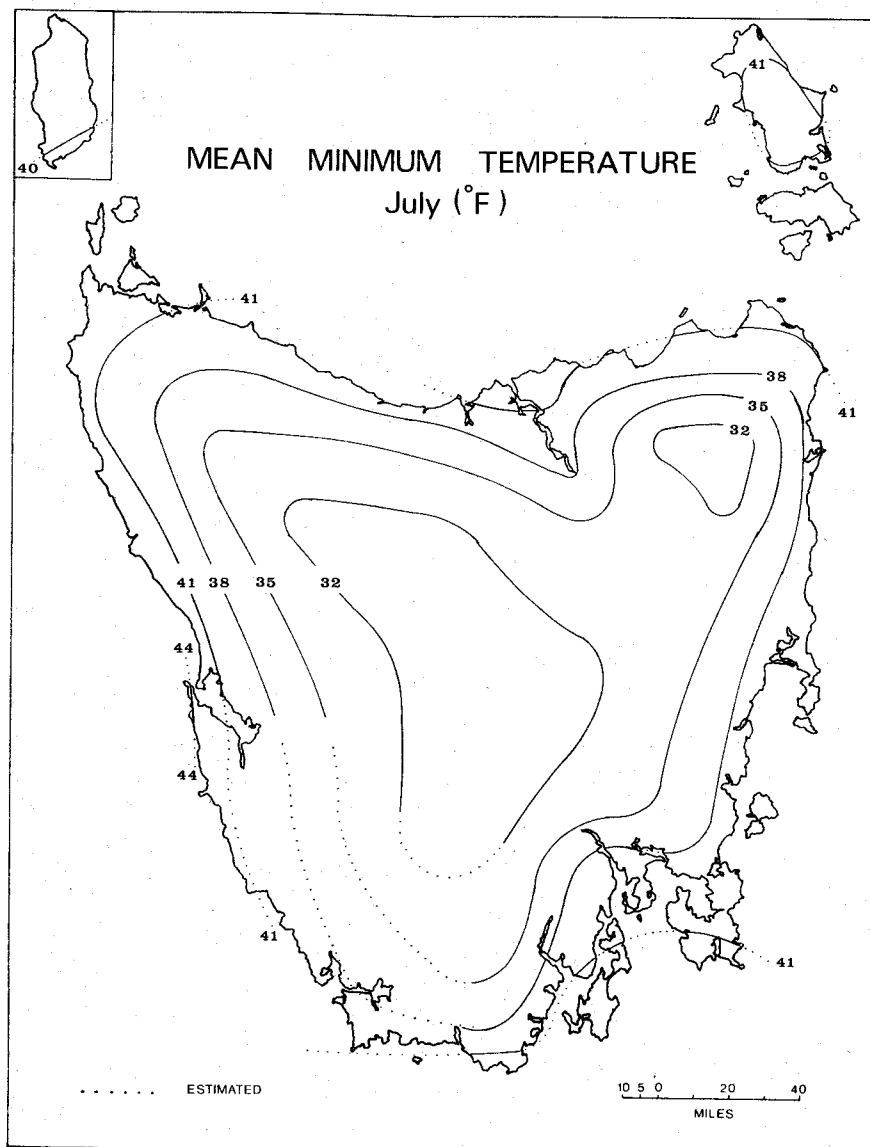
Sea level temperatures are reduced by approximately 5°F for each 1,000 feet of altitude. Hence in a mountainous island like Tasmania the isotherms (lines of equal temperature drawn on a map) will be much influenced by topography. Greater cloud cover over the western half, a result of the persistent westerlies, further decreases day-time temperatures in the west, while the Föhn effect warms and dries the westerly airstreams as they descend to the Midlands, the East Coast and South-East districts.

Frosts are affected markedly by topography, the valleys acting as natural channels for the drainage of cold air at night. Widespread severe frosts are experienced in winter on the Central Plateau and in upland valleys. Inland



centres below 1,000 feet are virtually frost-free only in summer, while the north coast, the east and south-east have few frosts after early October. Above 1,000 feet there is no frost-free month.

Tasmania only occasionally experiences the extremes of temperature common to the other States. High temperatures recorded in the east and south-east of Tasmania generally occur on the last day of a warm spell during which a dry air mass of continental origin is advected over this State, from a direction between north and north-west. Some cooling in the lower air layers over the waters of Bass Strait prevents the northern coast from reaching the higher temperatures that are experienced in the south under these conditions. The highest temperature recorded in Tasmania was 105.5°F at Bushy Park in December 1945. The lowest temperature recorded was 9°F at Oatlands in May 1902.



The recorded extremes of temperature for Hobart are 105.2°F in December 1897 and 27.7°F in July 1895. Readings above 100° or below 30° are rare, the mean maximum temperature in summer being 70°F and the mean minimum in winter, 41°F.

The mean maximum temperature for January and the mean minimum temperature for July over Tasmania are shown in the preceding maps. The mean maximum is the average of daily maxima for January; the mean minimum the average of daily minima for July.

Rainfall

Tasmania's position on the northern edge of the 'Roaring Forties' (a westerly air-stream), its exposure to this stream and the mountainous nature of the terrain are the controlling influences on the amount, distribution and reliability of the State's rainfall.

In the west, average annual rainfall ranges from 50 to 60 inches on the coast to 142 inches at Lake Margaret; in the north-east, from 22 inches on the coast to 50 inches on the highlands; while rainfall in the north-west ranges from 35 inches near the coast to 70 inches in the higher inland areas.

Extreme three to five-day rainfalls occur most often on the west coast in late June, when the westerlies are increasing in strength and persistence and the sea temperature is well above the land temperature. In the north, short periods of extreme precipitation occur when wind flow is sustained for up to two days from the north-east, usually mid to late autumn. The high moisture content of such streams from over the relatively warm waters of the Tasman Sea results in heavier, if less prolonged, rainfall than is produced in the westerly streams.

There is a strong gradation in rainfall from west to east, because of topography, with a distinct rain shadow east of the Central Plateau. Parts of the Midlands average less than 20 inches per year. Totals in the east and south-east are higher (up to 40 inches on exposed slopes).

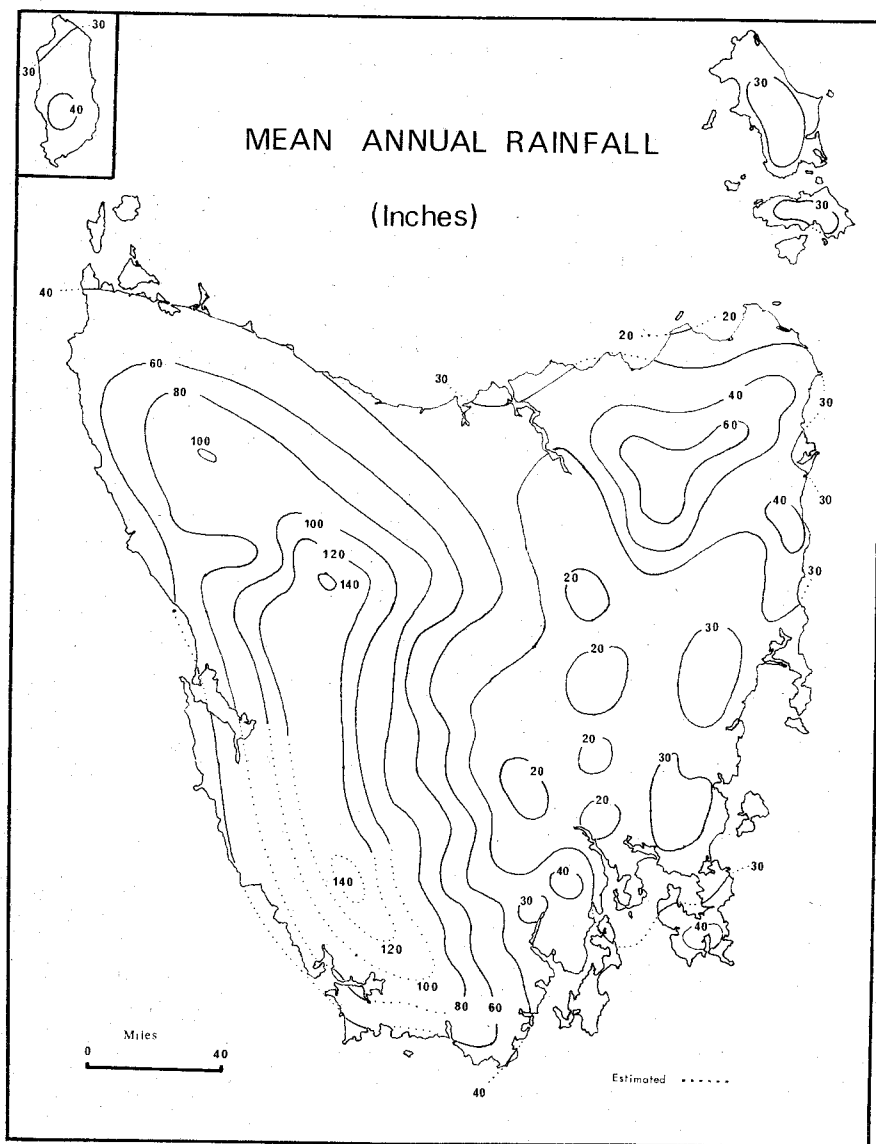
Rainfall is least reliable in the east, south-east, Midlands and Derwent Valley. These areas are driest when respectively, westerlies are relatively absent or at their strongest i.e. late summer and late winter. Highest rainfall in these areas tends to occur in autumn and spring, under the influence of small cyclonic depressions off the East Coast.

Effective rainfall is the amount necessary to compensate for evaporation, begin germination and maintain plant growth above the wilting point. Average rainfall is sufficient for this purpose from May to September. From October to January the chance of receiving effective rainfall becomes less and less, except in the west and north-west, where the probability is usually better than 50 per cent. In the Midlands, the Derwent Valley, the south-east and east, and in the northern inland, the chance of receiving at least effective rainfall during the summer months is very small.

Snow and Hail

Snow and hail can be experienced over the highlands at any time of the year. Heaviest snowfalls occur, as a rule, in late winter and spring, and less frequently in June and July. Extensive snow below 500 feet occurs, on the average, less than once every two years, associated with an unusually vigorous outbreak of cold air from Antarctic regions. There is no permanent snowline, but patches of snow often remain on the highest peaks till December.

The average annual rainfall distribution over Tasmania is shown on the accompanying map.



Hail is most likely in spring, though possible in any month. Hail storms are a big risk to fruit crops in the Huon Valley and on the Tasman Peninsula and sometimes cause extensive damage.

Thunderstorms

These are most common in the north and north-west of the State and are associated with the lifting of warm moist air by a cold front. Thunderstorms occur mainly in the summer months. Hobart and Launceston average five to seven storms per year, and the north and north-west ten to fifteen. The Central Plateau and north-eastern highlands report, on average, about five storms per year, while the Midlands, as gauged by Oatlands, has less than three.

Floods

In Tasmania the river system most affected by flooding is the South Esk. The Esk catchment includes most of the north-eastern highlands, where annual rainfall averages over 50 inches, and much of the Western Tiers where run-off can be rapid. As much of the South Esk and its tributaries flow through flat country, flooding can be widespread and disruptive.

The most severe floods on record in the South Esk basin occurred in April 1929, with a peak discharge flow of 140,000 cusecs (cubic feet per second) recorded at Launceston, and in late May 1969, with a peak discharge flow of 96,000 cusecs recorded at Trevallyn. The latter flood was far less damaging for Launceston because of the protection of the extensive levee system erected as a result of the disastrous 1929 floods.

Flooding of the Derwent River system can be extensive but is less frequent than in the case of the South Esk. The most severe flood on record in the Derwent occurred in April 1960 with the peak discharge flow recorded as 120,000 cusecs at Macquarie Plains.

Flooding of rivers in the west and south of the State can be of greater frequency than in the Derwent and Esk systems but because of mountainous terrain and lack of population these pass mostly unnoticed. Similarly the short fast-flowing rivers of the east coast flood and fall rapidly, but can cause damage and disruption of road systems.

In the north and north-west of Tasmania many rivers have their catchments along the northern edge of the Central Plateau and can flood quickly. In August 1970 severe flooding occurred along the Mersey and Forth River Systems causing loss of life, widespread property damage and stock losses, and severe damage to road and railway systems. The peak discharge flow of the Forth River (measured at Wilmot Junction) was 41,000 cusecs and the peak for the Mersey (measured at Latrobe) was 68,000 cusecs. The Hydro-Electric Commission has estimated that if storage and diversion effects were excluded from the August 1970 floods the estimated uncontrolled flows would have been 67,000 cusecs for the Forth at Wilmot Junction and 80,000 cusecs for the Mersey at Latrobe. Regulation and diversion caused a considerable flattening out of the peak flow.

Humidity

The mean relative humidity at both 9.00 a.m. and 3.00 p.m. exceeds 50 per cent at all stations in all months of the year. Relative humidity is generally higher in the morning than in the afternoon, and higher in coastal regions than inland. Days of high temperature combined with uncomfortably high humidity are rare. In the east and south-east, warm dry winds from a west or north-west direction may occasionally have a relative humidity as low as ten per cent.

Droughts and Bushfires

Although Tasmania has the highest average rainfall of any State in the Commonwealth, drought conditions are not unknown. Unlike the remainder of Australia droughts in this State tend to be highly localised and of reasonably short duration, due to the fact that Tasmania is an island, usually spanning only two to three years and, therefore, are less severe than in other States.

The localised nature of the Tasmanian drought greatly reduces its severity when compared with droughts in mainland States, where they tend to influence vast areas. The most severe droughts recorded in this State prior to the 1967-69 east coast drought were those occurring in the periods 1888-89, 1897-98, 1918-20, 1933-34, 1945-46 and 1949-52.

The years 1967 and 1968 saw a period of severe drought in the eastern half of the State. The rainfall which had been near normal in 1966, failed during the first half of 1967 and the drought did not break in central Tasmania until the second half of 1968, and on the extreme east coast until the summer of 1969.

The drought was primarily due to an absence of eastern airstreams, which bring moisture-laden winds to the east coast. Westerlies predominated throughout 1968, and generally rainfall in the western half of the State was above average. The situation deteriorated in the spring of 1967 and for the second time since 1950 the Government was forced to introduce electricity restrictions on bulk consumers. These restrictions, although relaxed, were not removed until 1 October 1968. Stock losses in the central and eastern areas were high. Agistment was undertaken by landowners in the western and northern areas of the State allowing considerable numbers of sheep and cattle to be moved from the drought area. The fodder situation was worsened to some degree by the running down of reserves following the provision of emergency supplies for pastoralists affected by the disastrous 1967 bushfires in southern Tasmania. Conditions improved during early 1969, although a drought pocket remained on the east coast between Bicheno and St Helens until autumn.

Serious bushfires occurred in 1898, 1915, 1946, 1951 and 1967. The bushfire of 7 February 1967 was the most severe in the State's history causing 62 deaths and damage to property estimated to be in excess of \$25m.

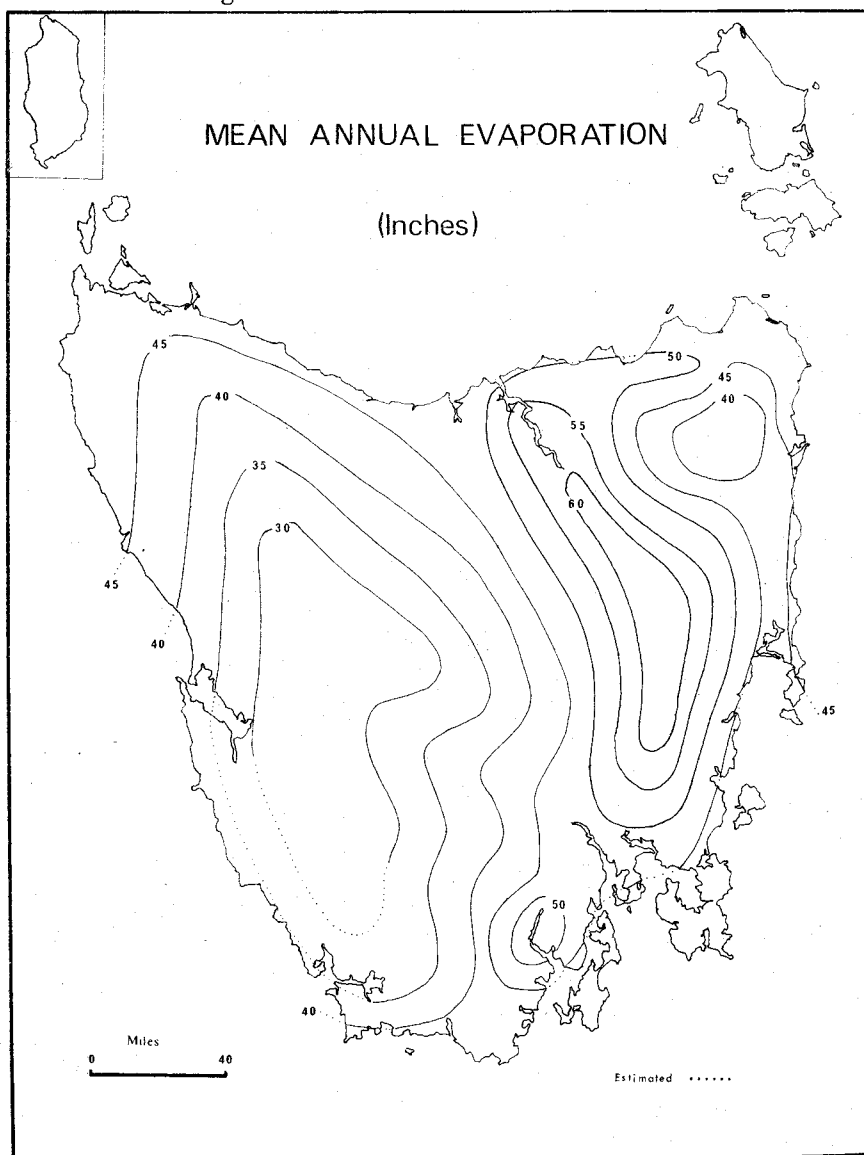
Evaporation

Evaporation depends mainly on wind strength, the moisture deficit of the airstream and on sunshine. The World Meteorological Organisation has asked for standardisation of measurement of evaporation by use of the Class 'A' pan (a galvanised pan, four feet in diameter and ten inches deep) which gives higher figures for evaporation than those obtained from the containers previously used in Australia. There is now an increased network of the new type pans and therefore the accompanying map showing mean annual evaporation has been redrawn using the new standards.

At Launceston Airport the annual evaporation is just over 60 inches due largely to the prevalence of winds coming from the Western Tiers, which become warmer and drier in their descent to the lower Midlands and Tamar areas, thus increasing evaporation. Monthly evaporation at Launceston Airport has ranged as high as eleven inches in summer but drops to between one and one and a half inches in winter. This area of high evaporation extends southward to the lower Derwent and Huon areas.

The lowest evaporation rate occurs in the Central Plateau, West Coast Ranges and south-west areas where evaporation may fall to less than 30 inches. This is due to the high moisture content of the prevailing westerlies and the high average cloud cover. In these areas the monthly evaporation rate may range from about five inches in January to only half an inch in June and July.

Another area of low evaporation (below 40 inches a year) is located in the North-East Highlands.



Sunshine

The average number of hours of sunshine a year ranges from about 2,500 hours in the northern Midlands to less than 1,750 hours on the west coast and western highlands, this area having the least sunshine in Australia. Hobart averages 2,100 hours per year and Launceston around 2,400.

In January daily averages of sunshine range from nine hours per day between the Midlands and Launceston to six hours per day on the west and south coasts. In mid-winter, average daily sunshine is down to a maximum of three hours on the east coast and to considerably less on the west coast and highlands.

The Climate of Hobart

Temperature: Mean maximum temperature exceeds 70°F in January and February. On average there are two or three days per year with maximum temperatures greater than 90°F. Only once have three successive days over 90°F been recorded in Hobart; in February 1968. Minimum temperatures below 30°F are rare.

The average annual frequency of days of frost is 31, mostly between June and August. Frosts have not been recorded during the month of January.

Rainfall: There is a strong gradient of rainfall, immediately west of Hobart suburbs, caused by the bulk of Mt Wellington. At the Pinnacle (4,166 feet) annual rainfall averages 65 inches. Ferntree (1,500 feet) has 55 inches. At the Regional Office of the Bureau, the average is nearly 25 inches but some suburbs on the Eastern Shore receive only 23 inches.

Monthly totals are fairly uniform. The wettest twelve months on record yielded 43.4 inches (to December 1916) and the driest, thirteen inches (to November 1943).

Relative Humidity: Highest humidity is at the time of lowest temperature, in the early mornings during winter. As temperatures rise to 3 pm, humidity decreases by 15-20 per cent. The seasonal variation is not great, although the average humidity during the winter months is 70 to 75 per cent and during the summer months 58 per cent. Periods of high humidity combined with high temperatures are rare.

Fog: Fogs occur in the city about four times per year, in the cooler months, but are more frequent over and near the Derwent River, down which they are often carried on a light north-west wind. Fog frequency is far less than either that of Launceston or Melbourne.

Wind: The main wind direction is north-west, induced by the orientation of the Derwent Valley. Next in importance is the sea-breeze (from south or south-east) during summer months.

The strongest wind gust experienced in Hobart was 93 mph recorded during a storm in September 1965.

Snow and Hail: Snow below 1,000 feet occurs, on the average, less than once per year. Falls lying in the centre of the city, almost at sea level, have occasionally been recorded, the last being in September 1970. Snow generally lies on Mt Wellington during winter and early spring months, but is rare between November and March. Hail occurs, on the average, four times per year, mainly between September and November.

Frost: The average annual frequency of days of frost is 31, mostly between June and August. None has been recorded in January. Cold air drainage is found in the hilly suburbs and frosts are common on the valley floors.

Sunshine and Cloud: No marked seasonal variation of cloud amount occurs but a strong dependence on time of day is evident. The average coverage is five-eighths to six-eighths. During April to September cloud cover is greater in the afternoon and greater in the morning from October to March.

A clear-cut seasonal variation in monthly average hours of sunshine also occurs with amounts varying from 231 hours in January to 111 hours in June.

Temperature and Rainfall: Hobart

The next table gives the main climatic data for Hobart during the year 1970 on a monthly basis:

Hobart Weather in 1970

Month	Shade Temperature				Mean Daily Hours of Sunshine	Rainfall	
	Mean Maxima	Mean Minima	Extremes			Total in 1969	88-year Average
			Maximum (a)	Minimum (a)			
	°F	°F	°F	°F	hours	inches	inches
January ..	69.6	55.3	85.2	47.1	6.5	3.26	1.91
February ..	68.7	52.3	82.0	46.6	7.6	1.45	1.62
March ..	67.8	53.2	83.9	40.0	5.4	2.00	1.85
April ..	66.1	51.0	83.9	42.2	5.3	1.15	2.16
May ..	56.9	43.4	68.0	38.1	4.2	1.26	1.92
June ..	54.3	42.7	60.4	32.7	3.4	1.77	2.34
July ..	53.6	42.0	59.6	33.9	3.9	2.02	2.09
August..	53.2	41.1	60.9	33.9	4.7	4.16	1.93
September ..	54.7	40.6	62.1	34.7	5.9	0.90	2.05
October ..	62.3	45.3	73.2	38.0	6.7	4.13	2.51
November ..	64.9	49.9	80.5	40.8	6.9	2.77	2.19
December ..	67.4	52.1	86.0	44.4	6.2	5.90	2.27
Total for Year	..	..	..	..	..	30.77	24.84

(a) Maximum for year: 86.0°F on 27 December; minimum for year: 32.7°F on 8 June.

The Climate of Launceston

Being over 30 miles from the coast, Launceston exhibits a slightly continental effect—greater seasonal and daily variations of temperature and lower rainfall as compared with stations on the coast.

Temperature: Average maximum temperature exceeds 75°F in January and February, 70°F in December and March, and 55°F in June and July. Average minimum is in the low fifties in summer, falling below 40°F in winter. Freezing temperatures are common during winter mornings, the lowest recorded being 21°F. Up to 50 frost days are to be expected in a year, mostly from May to August. Light frosts may occur in summer.

Rainfall: The annual average is 29 inches. The wettest month is July (3.4 inches) while January and February, the driest months each receive less than half this amount. The wettest month on record is August 1936 (10.01 inches). Some severe thunderstorms are experienced. Annual totals range from 18.40 inches (1908) to 41.63 inches (1946). Snow does not settle in Launceston, but falls occur on surrounding hills.

Relative Humidity: Seasonal and daily variations are similar to those for Hobart, but the daily readings are five to ten per cent higher.

Fog: Occasions of high humidity, associated with moist north-east air-streams, are relatively frequent. Fog occurrence averages more than 30 days a year, mostly between May and August.

Wind: The NW-SE orientation of the Tamar Valley has a marked effect on surface winds, which conform mainly to these directions. The north-west wind is often reinforced in the afternoon by a sea-breeze from much the same direction. Strong winds are most common during the colder half of the year and severe squalls can occur in association with thunderstorms.

Rainfall at Selected Stations

Annual Rainfall at Representative Stations
(Inches)

Station	Statistical Division	1967	1968	1969	1970	Long-term Average (a)
Avoca	NE.	14.56	20.57	25.37	33.15	21.56
Beaconsfield	NE.	25.29	48.34	39.42	42.81	37.03
Burnie (Holymans)	NW.	28.46	46.56	37.85	39.03	38.75
Campbell Town	Midland	12.96	19.78	r22.64	27.32	21.84
Cygnat	Southern	28.17	29.79	40.70	44.01	34.00
Cradle Valley	C. Plateau	88.42	160.87	106.81	129.62	115.20
Deloraine (Ashley)	NW.	26.88	45.77	36.90	n.r.	37.63
Franklin	Southern	27.72	42.74	39.50	43.81	35.45
Hobart (Weather Bureau)	Hobart	19.23	18.64	28.35	30.77	25.51
Hobart (Airport)	Hobart	18.31	15.98	26.09	27.56	22.52
Launceston (Airport)	N. Midland	19.40	35.98	31.62	32.74	28.24
Lilydale	NE.	27.13	45.79	38.46	46.48	38.07
Longford	N. Midland	18.58	32.39	28.91	31.06	24.83
Maydena	Derwent	42.29	68.36	51.72	55.88	48.18
New Norfolk	Southern	15.17	20.82	23.27	23.51	21.81
Oatlands	Midland	14.80	16.83	r24.87	29.52	22.29
Ringarooma	NE.	29.53	60.48	46.97	57.49	48.50
Scottsdale	NE.	26.57	47.15	36.74	47.49	38.60
Smithton	NW.	32.40	52.28	45.89	51.89	43.25
St. Helens	Northeast	18.65	18.03	36.65	43.25	30.73
St. Marys	Northeast	31.28	20.03	49.50	61.82	40.22
Swansea	SE.	17.84	14.40	37.49	37.55	24.21
Triabunna	SE.	22.02	14.72	r38.26	41.28	26.08
Ulverstone	NW.	28.09	45.47	r40.80	43.02	38.18
Waratah	West Coast	63.96	117.22	84.81	91.12	86.87
Woodbridge	Southern	29.90	37.68	40.68	44.52	36.28
Zeehan	Western	72.11	n.r.	92.74	104.13	96.44

(a) Number of years of record ranges from 88 at Hobart Weather Bureau down to 26 years at Hobart Airport.

Seasonal Temperatures

The mean temperature for any locality can give quite a false impression, e.g. a mean temperature of 60°F based on a maximum of 120°F and a minimum of 0°F, all in the one day. A better way of examining a locality's climate is to take the maximum temperature each day and average these readings for each season; similarly to take the minimum temperature each day and average these readings for each season. These mean maxima and minima then give an indication of the daily variation that may be expected. The following table shows the mean maximum and mean minimum temperatures for six selected stations in summer, autumn, winter and spring; Hobart, Devonport and St Helens are on the coast; Launceston is about 30 miles from the sea but at a low altitude; Oatlands is also about 30 miles from the sea at 1,400 feet; Zeehan is twelve miles from the sea at 580 feet.

**Temperatures at Selected Stations, 1970
(°F)**

Station	Maximum Temperatures		Minimum Temperatures		Mean Temperatures	
	Mean for Season (a)	Departure from Normal	Mean for Season (b)	Departure from Normal	Mean for Season	Departure from Normal

SUMMER (December to February)

Hobart	68.6	-1.2	53.3	+1.1	60.9	-0.2
Launceston ..	71.4	-3.7	50.4	-1.2	60.9	-2.5
Cape Bruny ..	64.6	+1.1	52.0	+0.7	58.3	+0.9
Waratah	62.3	-0.4	43.6	+1.2	52.9	+0.4
Devonport ..	68.3	-0.9	53.8	-1.7	61.1	+0.4
Maydena	68.9	-0.3	46.9	+2.7	57.9	+1.2
Oatlands	67.2	-2.6	46.3	+0.2	56.8	-1.2
St Helens	70.6	-0.7	51.7	+0.3	61.2	-0.2
Waratah	62.9	+0.1	44.3	+1.5	53.6	+0.8

AUTUMN (March to May)

Hobart	63.6	+1.0	48.9	+1.4	56.4	+1.3
Launceston ..	64.5	-1.1	46.2	+0.9	55.4	-0.1
Cape Bruny ..	60.6	+1.4	49.7	+1.0	55.1	+1.1
Waratah	56.1	+1.5	41.7	+2.2	48.9	+1.9
Devonport ..	63.6	+0.5	48.3	+1.0	56.0	+0.8
Maydena	61.2	+1.3	41.5	+0.4	51.3	+0.8
Oatlands	59.2	-1.0	41.4	+1.8	50.3	+0.4
St Helens	66.9	+2.0	47.6	+2.1	57.3	+2.1
Waratah	57.6	+2.9	42.8	+3.1	50.2	+3.0

WINTER (June to August)

Hobart	53.7	+0.1	41.9	+1.2	47.8	+0.7
Launceston ..	54.2	-0.6	38.7	+0.9	46.5	+0.2
Cape Bruny ..	52.7	+0.4	43.4	+0.4	48.0	+0.3
Waratah	45.7	-0.1	35.6	+1.9	40.7	+0.9
Devonport ..	54.2	-0.7	41.7	+1.7	48.0	+0.5
Maydena	50.6	+0.4	36.0	+1.3	43.3	+0.8
Oatlands	49.8	-0.3	35.8	+2.1	42.8	+0.9
St Helens	57.7	+1.3	38.1	+0.3	47.9	+0.8
Waratah	45.3	-0.5	35.5	+1.7	40.4	+0.6

SPRING (September to November)

Hobart	60.6	-1.6	45.3	-0.3	52.9	-1.1
Launceston ..	60.7	-3.7	42.7	-1.5	51.7	-2.6
Cape Bruny ..	57.2	-0.2	45.2	-0.5	51.2	-0.3
Waratah	51.8	-1.6	37.6	+0.8	44.7	-0.4
Devonport ..	60.2	0.0	44.0	-0.6	52.1	-0.3
Maydena	58.3	-0.7	39.1	0.0	48.7	-0.4
Oatlands	57.3	-2.6	39.0	+0.6	48.2	-1.0
St Helens	63.2	-0.2	42.3	-1.5	52.7	-0.9
Waratah	51.7	-1.6	37.8	+0.9	44.7	-0.4

(a) Average of maximum daily temperatures for season.

(b) Average of minimum daily temperatures for season.

Rainfall in Districts

Tasmania is divided into nine meteorological districts (not to be confused with statistical divisions) with fairly well-defined land use patterns appropriate to each. The following table shows rainfall totals for the past ten years:

Rainfall of Tasmania in Districts
(Inches)

Period	Northern	King Island	Central Plateau	Midlands
	Agriculture, Dairying and Mixed Farming		Grazing (Mainly Sheep)	
1961	29.91	34.55	33.83	15.38
1962	37.60	35.48	47.17	20.07
1963	33.65	30.79	30.74	14.94
1964	50.44	45.49	57.47	26.56
1965	31.06	35.89	35.86	18.25
1966	31.63	38.41	34.47	21.40
1967	25.85	29.67	30.19	13.89
1968	43.32	42.05	49.39	18.34
1969	38.28	36.36	43.62	23.62
1970	42.30	37.63	54.01	28.36
District Average (a)	39.46	36.98	38.40	21.84

Rainfall of Tasmania in Districts—continued
(Inches)

Period	Derwent Valley	South East	East Coast	West Coast	Flinders Island
	Fruit Growing, Grazing, Forestry		Dairy Farming	Mining	Grazing
1961	18.61	21.67	28.17	76.69	30.46
1962	29.93	30.12	29.96	105.99	37.07
1963	17.94	19.69	24.40	73.26	26.99
1964	30.98	32.05	36.65	115.97	37.45
1965	21.92	27.66	25.89	93.60	25.45
1966	25.15	31.03	28.72	78.02	26.04
1967	20.10	25.24	22.58	72.39	24.83
1968	29.09	28.53	22.02	124.70	26.41
1969	28.91	34.62	40.24	95.37	32.04
1970	32.43	38.97	48.25	98.71	40.19
District Average (a)	26.65	29.44	32.49	91.55	29.11

(a) Long-term annual average based on 58 years of record.

Meteorological Conditions, 1970

The rainfall pattern of November and December 1969 continued into the first week of January 1970 when cold frontal passages and rain depressions produced heavy rain over the eastern half of the State. The rains in early January caused river levels in the north-east and south-east to rise above flood level. Highways were affected on the East Coast and in the Midlands and flash floods occurred in Devonport and Burnie. The rainfall was well above average in most districts, except the *West Coast* and *King Island* where it was slightly below normal and the *Central Plateau* where it was only just above normal.

Temperatures were below normal in the first week of January but thereafter they were normal or slightly above normal due to clear, fine and dry conditions which persisted through February when the rainfall in all districts was below normal. Temperatures during February were generally lower than those of January but in some centres in the east and north-east they were up to 2°F above normal.

During March and much of April it was dry in the west of the State, rainfall was well above normal in the eastern half of the State and near normal in the north. Heavy rainfall in the north-east and east in the period 20-23 March produced some moderate to severe flooding in these areas. Due to the cloudy night conditions during March in eastern areas, minimum temperatures were above normal. Clear skies in western areas produced above normal day temperatures.

Rainfall over the eastern half of the State in April was generally below normal. With a return to a westerly regime in the latter half of the month the rainfall in the *Northern, Central Plateau, West Coast* and *Flinders Island* districts was above normal. April was generally a mild month with both maximum and minimum temperatures being well above normal. Hobart's monthly minimum was 7°F above normal. Towards the end of April frosts and some snow were reported from the *Central Plateau* and *Upper Derwent* districts.

Rainfall during May was generally below normal except for the West Coast. With a moist north-westerly stream over the State temperatures were well above normal early in May but dropped progressively with the passage of a series of cold fronts and consequently the May maximum and minimum temperatures were mostly near or below average.

During June, rainfall was below average for most districts, but an east coast low pressure area produced heavy rain over the *East Coast* and *Midlands* districts. In the twenty-four hour period to 9 a.m. on 11 June more than five inches of rain was recorded at Lake Leake where the total rainfall for the storm exceeded 10 inches. During the same storm falls of eight inches occurred around St Marys, Ben Lomond and Mount Victoria. Widespread flooding occurred in all eastern and north-eastern rivers, the major rivers affected being the South Esk and its tributaries: the Lake, Macquarie and Elizabeth Rivers.

Maximum temperatures during June were near or slightly above normal and minimum temperatures were generally above normal. Fogs and early morning mists were a feature during the first week of June, especially in the Derwent Valley. Frosts occurred on most nights.

July saw a shift back to a westerly regime, so the heaviest rain fell over the western half of the State and falls tapered off to slightly below normal in the east. Maximum temperatures in July were near or slightly below normal in most districts, except in the north-east where minimum temperatures were above normal. Snowfalls commenced in highland areas above 3,000 feet early in July and widespread, heavy snow occurred later in the month down to 1,000 feet.

August was notably cold, with rainfall much above normal and with frequent snowfalls down to low levels. There were two periods of damaging floods.

In the period 17-19 August heavy rains caused floods in the Jordon and South Esk Rivers and the South Esk tributaries Macquarie, Elizabeth, St Pauls and Break O'Day. Later in the month heavy warm rain fell over the snow

covered catchment areas for rivers in *Northern* and *North-eastern* districts and the combination of heavy rainfall and snow melt caused rapid run-off and floods, which were particularly severe and damaging in the Mersey-Forth River systems.

Very cold conditions were a feature during September with temperatures 3°F to 5°F below normal. The heavy rains eased off during September, although some further flooding occurred and snowfalls were frequently down to low levels. The rainfall was below normal in the eastern half but was above normal in the western half of the State.

The westerly airflow prevalent in October and December brought gales in December, rainfall was well above normal in all districts. Light to moderate flooding occurred in the east and north-east but was not serious. Though temperatures were 5°F to 6°F above normal at St Helens most maximum temperatures in other areas of the State were near or below normal while most minimum temperatures were near or above average.

(The section on Climate was prepared by the Bureau of Meteorology.)

Daylight Saving in Tasmania

Permanent daylight saving was introduced in Tasmania in 1970 following a two-year trial. During the period from the last Sunday in October to the last Sunday in February Tasmanian clocks are set on Tasmanian Summer Time, one hour ahead of E.S.T. (Eastern Standard Time) which corresponds with longitude 150°E. E.S.T. is observed in the eastern Australian States (but not in S.A. or W.A.).

Following the pioneering of daylight saving by Tasmania other Australian States have indicated a willingness to introduce parallel legislation. The eastern sea-board of Australia will operate a daylight saving scheme during the summer of 1971-72, but only for a period of four months; two weeks shorter than previously undertaken by Tasmania.

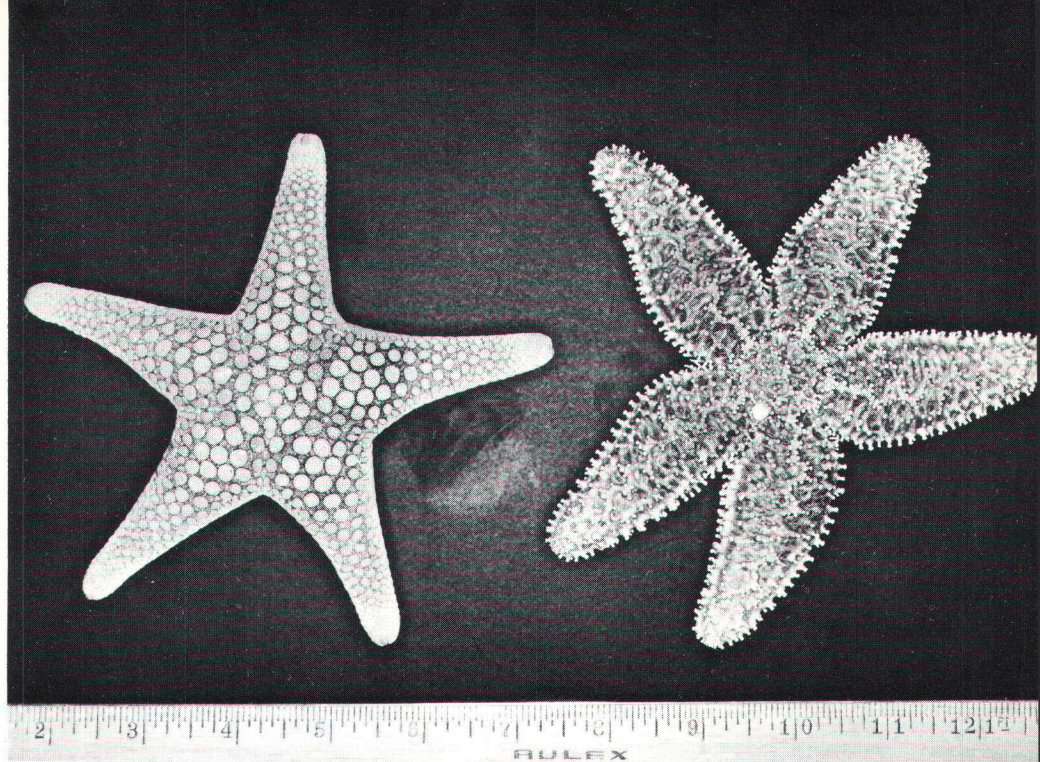
A detailed account of daylight saving in Tasmania may be found in the *1970 Year Book*.

THE FAUNA OF SOUTH-WESTERN TASMANIA

(The following article was contributed by Dr R. Swain, Lecturer in Zoology, The University of Tasmania.)

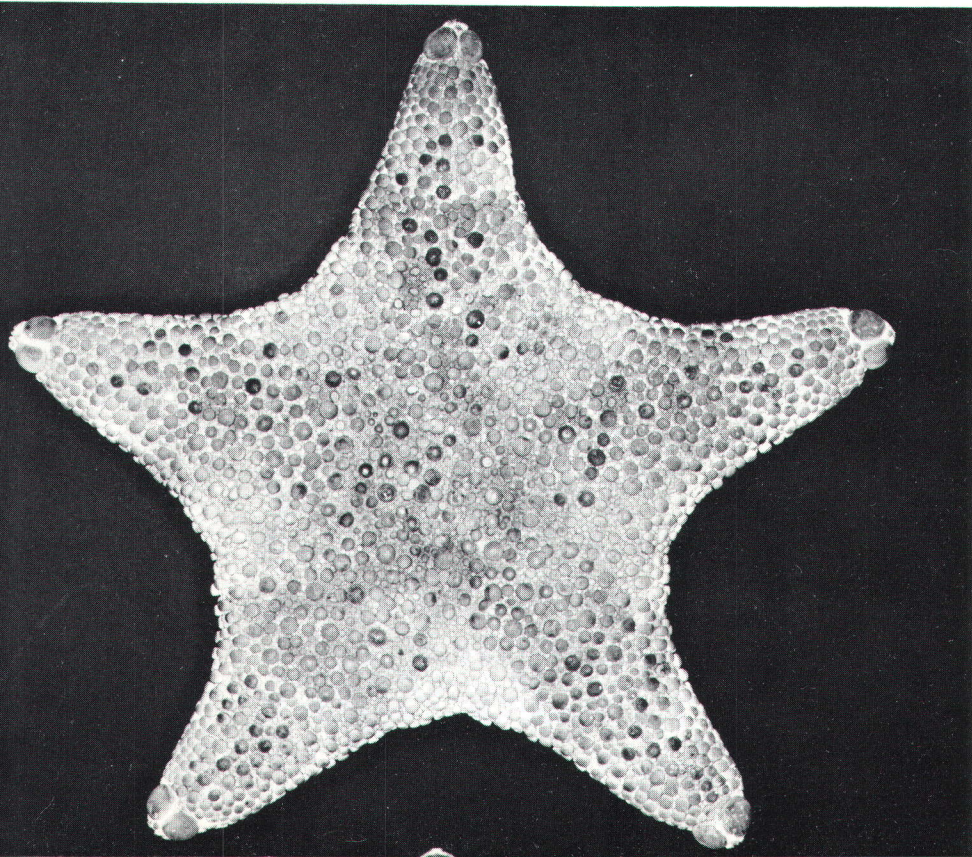
South-Western Tasmania—The Region

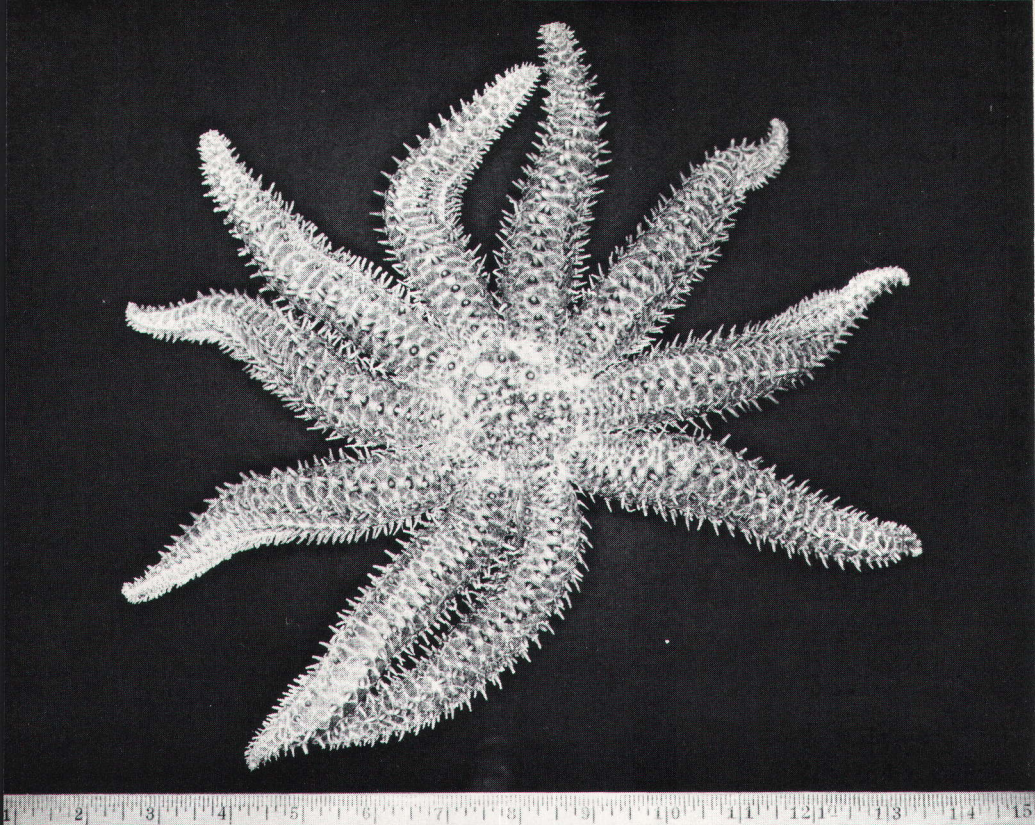
Tasmanians tend to refer to the various geographical regions of their State in terms which are often confusing to visitors (see 'Contents Section'). The 'south-west' is a typical example; the title has meaning although the region is not clearly defined. In the context of this article the boundaries may be considered to be represented by the Lyell Highway to the north and the Derwent Valley to the east; the southern coastal strip extending from the Derwent estuary to the Huon Valley is excluded. Within these boundaries is a generally inhospitable land of spectacular mountain ridges and wide valley plains. The ridges consist mainly of folded precambrian metamorphic rocks. Often the rock is exposed, elsewhere it is covered by shallow, infertile sandy soils. Rainforest and wet sclerophyll communities are found on the slopes with open sedgeland in the valleys broken by *Bauha* scrub along the streams. Restricted drainage and the consequent accumulation of organic matter in the valleys has led to the development of shallow, strongly acid,



Sea Stars—Top: *Nectria ocellata* (left); *Uniophora sinusoida*
Bottom: *Asterodiscus truncatus*

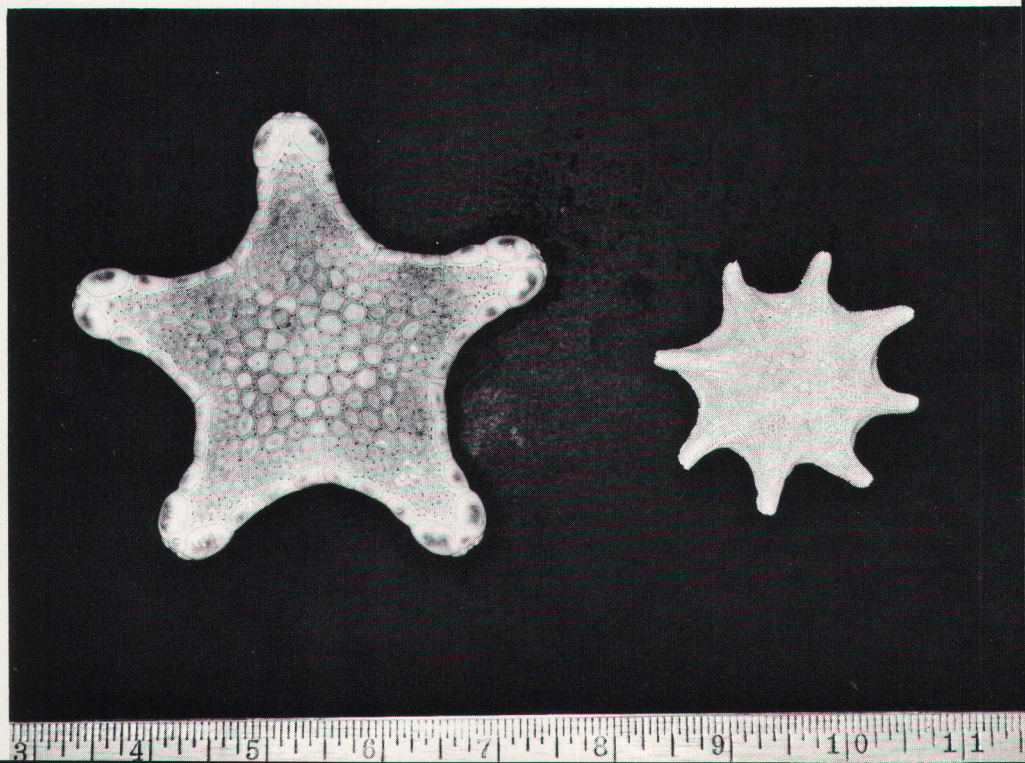
(Tasmanian Museum)





Sea Stars—Top: Coscinasterias calamaria
Bottom: Pentagonaster dubeni (left); Patiriella calcar

(Tasmanian Museum)



peat soils supporting a vegetation characterised by *Mesomelaena sphaerocephata*, the buttongrass from which the valleys get their name. The waters of the region predictably have high concentrations of humic acids and low concentrations of dissolved inorganic salts, which result in brown, strongly acidic waters with a high organic content.

From the earliest days of Tasmanian history, the south-west of the State has been known as one of Australia's finest wilderness areas. This reputation has been justly deserved and maintained due to the ruggedness and inaccessibility of the terrain. Consequently there have been few serious biological studies of the region and it is only in the last few years that any real fauna survey has been attempted. Even now surprisingly little is known and it will be some time before scientists can attempt to answer the interesting ecological and physiological questions that life in such an environment raises. It is clear, however, that, as elsewhere in Tasmania, the zoological interest of the south-west lies not so much in the diversity of the species found there but in the uniqueness of a relatively small number of species. Also in keeping with the general character of the island's fauna, most of the interesting species belong to the invertebrate groups, particularly the crustacea; the larger and more commonly observed vertebrate representatives offer little that is not found in other localities. Nevertheless until recently most recordings were of vertebrates and it is probably as a result of these that many people believe that the fauna of the south-west is rather sparse.

In view of their size and edibility it is not suprising that mention is made of wallaby, wombat and wildfowl in even the earliest reports of the area. Indeed Captain James Kelly who discovered Port Davey and Macquarie Harbour in 1815 reported great quantities of black swans, teal and other wildfowl—in fact he enjoyed a fine Christmas dinner of roast swan at Christmas Cove. More interesting is his report that in the vicinity of Macquarie Harbour the whole face of the coast was alight as a result of native activity. It is now generally accepted that the characteristic button grass plains in which most of the area's interesting animal life is found, owe their origin and continued existence to the combination of low soil fertility and recurrent burning.

Mammals

All three extant mammalian sub-classes (Prototheria, Metatheria and Eutheria) are represented in the south-west and few Tasmanian species are absent.

Prototheria

The existence of the Platypus and the Echidna, members of the egg-laying mammals, is well documented and sightings have been made at a number of localities although few specimens have actually been captured.

Metatheria

Most of Tasmania's marsupials also occur; wallabies, pademelons, wombats, native cats, Tasmanian devils, pygmy possums, ringtail possums, the dusky marsupial mouse and the little Tasmanian marsupial mouse have all been caught in the area. The only conspicuous absentees are the rat kangaroos (bettong and the potoroo) and the bandicoots (barred and short-nosed). However, the gap may only reflect the lack of intensive sampling since the potoroo and short-nosed bandicoot, both of which prefer thick scrub, might be expected to be present in some areas. The bettong and barred bandicoot tend to prefer fairly dry, lightly-timbered country and are perhaps unlikely candidates. Of those marsupials listed as occurring, the only species present

in the south-west in greater numbers than elsewhere in the State is the little Tasmanian marsupial mouse, *Antechinus minimus*. Specimens are yellowish to reddish-grey in colour. Although rarely seen the animal is probably fairly common in the open plains, building nests and runways in buttongrass and sedge tussocks.

A description of the other Tasmanian marsupials has been published in the 1970 *Year Book*.

Eutheria

The south-west also contains all recorded species of native rats. Apart from bats, the rodents are the only Tasmanian representatives of the third sub-class of mammals, the eutheria, in which a pouch is absent and the young are born in an advanced state of development after a relatively long gestation period. All Tasmanian rodents belong to the Family Muridae.

Rattus lutreolus velutinus: The most frequently encountered rodent in the south-west is the Velvet-furred Rat. This indigenous species occupies a wide range of habitats throughout the State; in the south-west it is most common in the button-grass sedgeland and myrtle rainforests. Adult specimens are about ten inches from snout to tail, the tail occupying less than half the total length. The animal's fur is very soft and dense, the colour varying considerably from light tan to dark brown. It has a somewhat pointed face with small eyes set well forward. In buttongrass and swamplands the animals produce well developed runways which often form an extensive labyrinth of tunnels. These runways are frequently shared with the Broad-toothed Rat, *Mastomys fuscus* and the marsupial mice, *Antechinus minimus* and *A. swainsonii*. Nests are usually hidden at the base of buttongrass tussocks and are rarely observed. In rainforest, runway systems are less common, presumably due to the reduction in surface vegetation. Natural holes and cavities are utilised for nesting and retreats.

The diet of the Velvet-furred Rat consists predominantly of plant material; a wide variety of roots and young shoots is devoured. Litters of from three to six young are produced between October and February. Breeding is prolific; a record has been made of seven litters totalling 27 young being produced by one captive pair in eleven months.

The two remaining terrestrial rats found in the south-west, the Long-tailed Rat, *Pseudomys bigginsi* and the Broad-toothed Rat, *Mastomys fuscus* appear to have much stricter habitat requirements than *R. lutreolus velutinus*.

Pseudomys bigginsi: The Long-tailed Rat is widely distributed but limited to wet sclerophyll and rain forest. It is an attractive little animal somewhat resembling a tailed version of the European hamster; captive specimens becoming almost as tame as these pets. About the same size as *R. lutreolus velutinus* it is readily distinguished by its more prominent eyes, relatively longer legs and the fact that the tail, which has a white under-surface, is longer than the body. The fur is again soft and dense and somewhat fluffy and the colour is a greyish brown, darkest on the back and lightening to a pale grey on the belly. Very active and inquisitive, the species is mainly nocturnal. Nesting sites are usually located in holes in rotting logs and stumps and are very hard to locate since this species does not prepare well defined runways. Field studies indicate that *P. bigginsi* is almost exclusively vegetarian although in captivity a wide variety of insects is relished. Breeding is confined to the summer season, litters usually of three young being produced from mid-November to mid-March. Two litters a season may be produced but the species does not appear to be as prolific a breeder as *R. lutreolus velutinus*.

Mastomys fuscus: The Broad-toothed Rat is a rare and localised species recognised as one of Australia's endangered mammals. It is confined to the buttongrass sedgeland, occurring in association with *R. lutreolus velutinus* and *A. minimus*. The species is even more docile in captivity than *P. bigginsi*. It bears a strong superficial resemblance to the Velvet-furred Rat but may be distinguished by its less pointed face and fuller cheeks. Also the eyes are more prominent and noticeably less of the lower incisors is visible.

M. fuscus is purely vegetarian and appears to have a fairly limited diet; it is particularly fond of the common rapier sedge, *Lepidosperma filiforme*, from which the faeces derive a characteristic green colour. Breeding occurs from October to March, usually with only two young per litter, although more than one litter may be produced.

One interesting aspect of the mammal fauna of south-western Tasmania is the absence of the rabbit. Dense rainforest and unpromising buttongrass plains have prevented the invasion of this pest and the region is consequently one of the few remaining in Australia where native animals can be studied in the absence of ecological interruption by man or rabbit.

Avifauna

The south-west provides habitats for a number of interesting species of bird-life. A discussion of the endemic bird-life of Tasmania has been included elsewhere in this chapter and no further reference to avifauna will be made in this section.

Reptiles

Lizards

Four of Tasmania's eleven species of lizard (*Leiopisma pretiosum*, *L. ocellatum*, *L. metallicum* and *L. entrecasteauxii*) are extensively distributed throughout the south-west. *L. pretiosum* and *L. ocellatum* are endemic to Tasmania. All are viviparous, an advantage in cold, unreliable climates.

Unlike many other live-bearing lizards a true placenta is developed for the transfer of nutrients between parent and embryos. Research work at the University of Tasmania has uncovered two other reproductive adaptations which would facilitate survival in marginal habitats. Mating occurs at the end of summer when the animals are active and well fed, but fertilisation does not occur immediately and instead the female stores the sperm until the following spring, thus avoiding the high energy expenditure associated with gonad and embryonic development during the winter months, while at the same time facilitating an early start to breeding when the temperature begins to rise in the spring. The second adaptation is that not all females will produce young at the normal time, i.e. late summer; a proportion of the population will retain their embryos over the winter months and give birth the following spring resulting in a gestation period of up to 15 months. This ensures that a particularly adverse summer and autumn season will not result in the loss of a whole year's breeding.

In addition to the species mentioned *Tiliqua casuarinae*, the Slender Blue-tongue, has also been recorded from near Bathurst Harbour. This species is commonly found in coastal heaths and open grassland and its existence in the south-west suggests that the blue-tongue, *T. nigrolulea*, and White's skink,

Egernia whitii, which both have similar habitat requirements, may also be present around some of the coastal margins. In that case the only absentees would be the four oviparous (egg-laying) species and these would be very unlikely to find acceptable breeding conditions.

Snakes

At least two of Tasmania's snakes are found in the south-west. The Whip Snake, *Denisonia coronoides*, is common in the buttongrass plains and the Tiger Snake, *Notechis ater*, is very common throughout the region. The Copperhead, *D. superba*, is almost certainly present but surprisingly does not appear to have been reported. All three species of snake are viviparous. The Tiger Snake and the lizard, *L. metallicum* are the only reptiles to inhabit the rainforests.

Amphibians

Frogs

Tasmania possesses ten species of frogs but only four of these are found in the south-west. None of the species of bullfrog, *Limnodynastes*, has been recorded and the other absentees share with these a preference for open, savannah type areas. Of those present, *Hyla ewingi*, Ewing's Tree Frog, and *Crinia signifera*, the Brown Froglet, are widespread throughout Tasmania and mainland Australia and appear to be able to thrive under a very wide range of environmental conditions. The other two frogs *Hyla burrowsi* and *Crinia tasmaniensis* are endemic to Tasmania and both have their strongholds in the western part of the State.

Hyla burrowsi: This large climbing frog first described in 1942 is a rather attractive green in colour with brown mottling. Although adults are rarely encountered the species is widely distributed and is common in both rain forest and sedgeland habitats. Breeding occurs in spring and large clusters of eggs are laid attached to vegetation in open pools and tarns. The tadpoles are large active swimmers feeding mainly at the surface. *H. burrowsi* is of interest because its relationship to other Australian Hyliidae is far from clear; unfortunately at the moment relatively few specimens are available for study.

Crinia tasmaniensis: This is the only Tasmanian frog to occur above about 3,500 feet. Generally considered to be a high altitude species it is by no means restricted to subalpine and alpine situations and is frequently encountered in pools, often no more than flooded yabbie holes, in the buttongrass plains. Breeding occurs in spring and any small pool, not necessarily permanent, will suffice. In contrast to *H. burrowsi* the eggs are laid separately on the bottom of the pool. The resulting tadpoles are bottom dwellers feeding largely on decaying plant material; the fins are rather reduced and consequently they are not very active swimmers.

Fish

Native Trout

Galaxiid fishes (Native Trout) are common throughout the south-west but it is only recently that serious collections have been made and the identity of most specimens remains uncertain.

Galaxias maculatus: The Jolly tail is common in the streams entering Bathurst Harbour. This coastal species is notable mainly for its interesting breeding behaviour. Adults migrate downstream into tidal estuaries where they deposit their eggs at the high water mark of the spring tides. The eggs hatch at the next spring tide and the young fish spend the early part of their life at sea before returning to freshwater to mature.

Saxilaga: The galaxiids include a number of mud-borrowing species (*Saxilaga*) and these have also been reported from the vicinity of Bathurst Harbour, though unsubstantiated verbal reports indicate that they are probably extensively distributed throughout the south-west. Specimens of an undescribed species of the mudfish have been obtained at Bathurst Harbour in the bottom of a prospecting hole located some thirty feet above the nearest water course! The high tolerance to desiccation plus the ability to burrow into mud or damp earth means that such fish are well adapted for life in small creeks which may frequently dry up in the summer months. Galaxiid fishes are found in Australia, New Zealand, South America and South Africa.

Invertebrates

Most of the scientifically exciting animals found in south-western Tasmania are invertebrates. Many of the groups are very poorly known and only representatives of the crustacea are considered here.

Crustacea

Parastacoides (Land Crayfish): The commonest crustacea, and the commonest animals in the region are the land crayfish—the yabby.

The buttongrass plains and a good part of the mountain slopes are dotted with the openings of countless burrows excavated by these semi-terrestrial crayfish. A burrow system may be very complex often possessing a number of openings and always containing a retreat chamber. This retreat chamber is usually located at the lowest level of permanent water; in well drained, drier areas it may be as much as five feet below the surface, but where the gravel bed is close to the surface it may be only nine inches down. Only rarely does a burrow system contain more than one mature animal, though several juveniles may be permitted to share occupancy.

Yabbies are omnivorous; the diet consists primarily of plant material, especially roots, but large numbers of earthworms are also eaten, as also are other yabbies. To conserve calcium (an essential element for their exoskeleton) which is in very short supply in the dilute waters of the south-west, the animals eat their own cast 'skin'.

These land crayfishes possess a number of other physiological adaptations which enable them to survive in unreliable, highly acidic waters containing low concentrations of dissolved inorganic salts. Thus adults, but not juveniles, are extremely tolerant of desiccation, low oxygen concentration and high acidity. Laboratory work has shown that they can live in hydrochloric acid at pH₂ (a very high acidity level) for one week.

Mating takes place in the late summer and the females are found between April and November carrying eggs attached to their abdominal limbs. The young hatch as miniature, though immature, adults and remain attached to the parent for some time; females carrying young have been collected from late October until February.

The yabbies of the south-west all belong to the genus *Parastacoides*. The family Parastacidae to which they belong has representatives in South America, New Zealand, New Guinea, the Aru Islands (south of New Guinea) and Madagascar as well as in Australia, but *Parastacoides* itself is endemic to western Tasmania. Six species are currently recognised but recent examination of more extensive collections indicates that these are probably all geographical variants of one basic species, *P. tasmanicus*.

Representatives of two other interesting crustacean groups are found living in association with *Parastacoidea*; namely the phreatoicids and the syncarids. Both of these are extremely ancient groups that have survived virtually unchanged for many millions of years.

Phreatoicoidea: The Phreatoicoidea is a sub-order of the Isopoda, a large order of crustacea containing the common woodlouse, or slater, among many others. Phreatoicids are known from New Zealand, India, and South Africa but the greatest abundance and numbers of species are found in Australia, and particularly in Tasmania. There are three families in the sub-order; the Amphisopidae, the Phreatoicidae and the Nichollsidae, the latter occurring only in India. Tasmania's only described members of the Amphisopidae are found in the west and south-west of the island. Very little is known of this family of crustacea.

Hypsimetopus intrusor: This species was described in 1902 from three specimens obtained from yabby burrows near Zeehan. This interesting blind and subterranean animal, whose name means 'high brow' in reference to the raised frontal region of the head segments, has not been found since 1902 although several zoologists have undertaken an intensive search. Tasmania's other amphisopid is another blind form, *Phreatoicoides longicollis*, described in 1942 and not officially recorded since 1929, although several specimens were collected from Hells Gates; near Port Davey; and from near Zeehan in 1970. Fossil phreatoicids very similar to the amphisopids have recently been discovered in Middle Pennsylvanian deposits of Illinois, U.S.A. which gives the group a history of some 120 million years. The family Phreatoicidae has its headquarters so to speak in eastern and central Tasmania and in fact has never been recorded from the south-west. However, *Colubotelson* is widespread and common in many mountain tarns and slow-flowing creeks and has even been found in yabby holes.

Unfortunately little is known of the biology of phreatoicids. It is known that animals take two years to reach sexual maturity; mating takes place around March and the female carries the eggs until August or September. About 20-30 eggs are carried in a specialised brood-pouch (marsupium) which consists of a series of overlapping plates developed from the bases of the anterior walking legs. Although adult phreatoicids can often withstand drying out of the environment by burrowing into damp mud there is no special stage in the life cycle resistant to desiccation. The eggs hatch as miniature, immature adults and in most cases the parent female dies shortly afterwards. Phreatoicids are filter feeders, continually sifting through mud to obtain particles of detritus.

Syncarids: The syncarids are an even older group of fresh water animals than the phreatoicids. The significance of these 'living fossils' lies in a combination of their antiquity—fossils almost identical with present day forms are known from the Carboniferous period, 270 million years ago—and the important position they occupy in crustacean classification. They provide us with valuable insights into the evolution of the higher crustacea. Syncarids differ from these more specialised forms in the lack of fusion in the body segments, the absence of a hard, protective carapace, (with the result that the gills are completely exposed) and the fact that the female never carries the eggs.

In south-western Tasmania, four species of syncarids, representing three genera and two families are known and it is quite probable that more will be discovered. The Family Koonungidae is represented only by the genus *Micraspid* while the Family Anaspididae is represented by one species of *Anaspides* and two species of *Allanaspides*.

Micraspides calmani: This is a small, largely subterranean animal a little under one centimeter in length. It was discovered in 1928 in sphagnum moss and in association with yabby burrows in the vicinity of Queenstown; in 1970 specimens were also obtained from *Parastacoides* burrows at Port Davey and it will be interesting to discover whether there is a continuous distribution along the west-coast. Like the amphisopid phreatoicids found in the same habitat, *M. calmani* is blind. Nothing is known of its biology.

Allanaspides belonomus: In November 1969 a completely new syncarid was discovered near Lake Pedder, again living in the burrows of *Parastacoides*. Named *Allanaspides belonomus* it was subsequently also found near the McPartlan Pass where a second species, *A. bickmani* was discovered. *Allanaspides* is less specialised for a subterranean life than *Micraspides* and has well developed stalked eyes. It is frequently found in surface pools in the buttongrass plains. Large specimens may reach 13.5 mm in length.

The discovery of *Allanaspides* has necessitated a re-evaluation of the taxonomy of Tasmanian syncarids and raises interesting zoogeographical questions. Of particular interest is the animal's possession of a very well developed dorsally placed organ in the cephalothorax—this organ is not present in any other animal group and its function is at present uncertain.

Anaspides tasmaniae: This crustacean is the well known 'mountain shrimp' of Tasmania. It is common in mountain tarns and lakes in the south-west, less common in creeks and has even been found in buttongrass pools. In recent years cave specimens, completely devoid of pigmentation and exhibiting a number of morphological differences from surface animals, have been obtained. *A. tasmaniae* is by far the largest of the syncarids; the largest specimen discovered is a female of 56 mm and probably larger specimens are to be obtained from some of the south-western lakes. The animal is omnivorous spending much of its time browsing on algae and on the submerged shoots of mosses and liverworts, but in addition consumes significant quantities of animal material; at least in the laboratory, cannibalism is quite frequent.

In the Hobart district eggs may be laid in any month of the year though mostly in spring, and the young hatch between June and October. Consequently most eggs take about eight months to develop although those laid in autumn and winter require up to fourteen months. A similar sequence of events may be presumed for *Anaspides* living in the south-west. The eggs are approximately one millimeter in diameter and are laid singly on vegetable debris. They are quickly covered by algal growths and sediment and are subsequently extremely difficult to locate.

Fossil syncarids very similar to *Anaspides* are known from at least 250 million years ago. Those syncarids which have remained relatively unspecialised and have retained their primitive structure, i.e. the Anaspididae, are now found only in Tasmania; the Koonungidae occur also in Victoria while a closely related group the Stygocaridacea has been discovered in South America. The only cosmopolitan group of syncarids is the Bathynellacea, the members of which have become very specialised for life in subterranean and interstitial environments.

Summary

In most of the groups considered in this article it has been noted that species occurring in south-western Tasmania and to make the point more general, in Australia, have very close relatives occurring in the other southern hemisphere land masses. This relationship holds for many Australian

animals and has long been a puzzle and a source of controversy to scientists. A number of explanations have been put forward but the only hypothesis which seems adequate at the moment is that of 'continental drift'. This idea has a number of variants but put in its simplest form it suggests that the southern land masses were once part of a single land mass which was not finally separated into its modern constituents until early in the Mesozoic era, (say 200 million years ago). Australia, South America and Antarctica are considered to have been the last to separate, which helps to explain why Australian and in particular, Tasmanian fauna is more closely linked with South America than with Africa or India.

It is apparent that we still know relatively little of the fauna of southwestern Tasmania. Much of what we do know has only been discovered in the last few years. The taxonomy of many groups is still very incomplete and we know virtually nothing of their breeding habits, or of how animals such as *Allanaspides* and *Parastacoides* manage to survive in buttongrass waters which not only fluctuate markedly but also possess extremely low ion concentrates and high acidity. Similarly we are ignorant of population densities, geographical distribution and other aspects of the region's ecology. South-western Tasmania is not just Australia's finest wilderness area, it is undoubtedly a rich source of biological material of world as well as local interest.

THE ENDEMIC BIRDS OF TASMANIA

The following article was contributed by Mr D. G. Thomas, President, Bird Observers' Association of Tasmania.

Introduction

In common with most islands Tasmania has an impoverished birdlife (avifauna) with only fifteen species of birds being endemic i.e. exclusively breeding in Tasmania, and a further twenty-six subspecies recognised as island races of continental species. Of 176 land and fresh-water birds breeding in Victoria in habitats similar to those found in Tasmania, only 104, or 59 per cent, also breed in this State. The reasons for this are not fully understood, but are more likely to be associated with ecological factors within Tasmania than with any inability to cross Bass Strait.

Birds which have differentiated sufficiently to be regarded as species different from their closest relatives are usually thought to have been the earliest colonists. Those species in which island populations cannot be distinguished from mainland birds are usually considered to be the most recent arrivals. A subspecies is intermediate between the two but recent evidence has shown that an isolated population may develop into a new subspecies within a few generations. In view of this, the accepted theory may have to be reconsidered but when discussing the endemic birds of Tasmania, the chronological concept is still a useful working hypothesis.

It should be pointed out that opinions differ as to the dividing line between species and subspecies. Some Tasmanian birds which were once regarded as being endemic are now thought to be subspecies of more widely distributed species. For example, the Tasmanian Masked Owl is now regarded as being a subspecies of the mainland Masked Owls.

Throughout this article both the English and Latin names are those used in the *Official Checklist of the Birds of Australia* published in 1926 by the Royal Australasian Ornithologists Union. The vernacular names used in various

parts of the State may differ from 'official' usage. In the interests of clarity, 'official' names have been retained and it is hoped that they will become more generally used.

Climate and Habitat

Introduction

The distribution of birds is determined by their habitat and food preferences. Tasmanian habitats can be divided roughly into two categories, depending on the tolerance of the vegetation to temperature and rainfall.

Cold-wet adapted habitats occur over much of the western half of the State, with isolated pockets at Ben Lomond, Mount Elephant, eastern Tasman Peninsula and South Bruny Island. Warm-dry adapted habitats occupy the rest of the State and Flinders, King and Maria Islands.

The distribution of vegetation was very different at the height of the last glaciation during the Pleistocene epoch which occurred about 18,000 years ago. During this period Tasmania was part of the Australian continent. With the enormous amount of water locked-up in the ice caps, the sea-level fell to such an extent that Tasmania was connected to Victoria by a land-bridge through the Furneaux group of islands; King and Maria Islands were also connected to Tasmania. Elsewhere, the steeply sloping continental shelf would have resulted in a seaward extension of the land surface of up to 15 miles. Only small amounts of the present warm-dry habitats would probably have existed.

From 18,000 years ago the climate warmed-up and the sea-level rose, progressively separating Flinders Island from Victoria, King and Maria Islands from Tasmania and finally severing the Tasmania-Flinders Island link.

During the last 6,000 or so years in which the Victoria-Flinders Island land-bridge existed, the extent of warm-dry habitats would have increased, the species spreading south as the temperature rose.

Cold-Wet Habitats

The present-day cold-wet adapted habitats comprise:

Temperate Rain Forest: Dominated by the Antarctic Beech, *Nothofagus cunninghami*, which occurs from sea-level to 3,000 feet where annual rainfall exceeds 45 inches. Within this area occur wet gullies where the dominant vegetation is tree ferns and mosses.

Sub-Alpine Forest: Occurs from 3,000 feet to the tree-line. The dominant tree is the Snow Gum, *Eucalyptus coccifera*, and there is a rich shrub-layer which includes the deciduous Beech, *Nothofagus gunnii*.

High Moors: Occurring from 3,000 feet upwards, the dominant species are Snow Grass, *Poa coespitosa*, on the better drained soils and Pineapple Grass, *Astelia alpina*, in less well-drained sites.

Wet Sedgelands: Better known as 'Button Grass Plains'; occurring from sea-level to 3,000 feet. Button Grass, *Mesomelaena sphaerocephala*, is the dominant plant, often forming almost pure stands.

Warm-Dry Habitats

The warm-dry habitats consist of:

Low-Altitude Heath: Occurs on deep sandy soils, mainly in coastal areas.

Savannah Woodland: Occurs mainly in the Midlands where the rainfall is less than 22 inches and consisted originally of native grasses and scattered eucalypts. Large areas of native grasses have been replaced by improved pasture.

Dry Sclerophyll Forest: The dominant formation over much of eastern Tasmania, where the yearly rainfall is 22-30 inches. It is made up mainly of eucalypts, the species depending on rainfall, drainage, soil, altitude and aspect.

Wet Sclerophyll Forest: Occurs in areas with a rainfall of 30-50 inches. It consists of tall eucalypts with a tree under-storey or well-developed shrub layer.

The above reconstruction of the history of the vegetation and habitat classification is after Ridpath and Moreau (1966). It is of interest because it might be expected that the endemic birds would be associated with the cold-wet habitats which are thought to have been in existence for at least 18,000 years.

Endemic Species

Tribonyx mortierii (Native Hen)

This large flightless bird is generally greenish-brown in colour with a conspicuous white mark on its flanks. It is common near water throughout eastern Tasmania and is regarded officially as a 'pest species' because of the damage it is supposed to do to crops. This aspect has been studied by Ridpath and Meldrum (1967 a, b) who concluded that wide-spread control campaigns are neither necessary nor desirable. Flightless species such as *T. mortierii* and other species confined to islands are particularly vulnerable and many have become extinct.

Platycercus caledonicus (Green Rosella)

This bird varies a great deal in the brilliance of its plumage which is dark green with yellow breast and red forehead. It is a very widespread species appearing in most forested areas and is by no means restricted to cold-wet habitats.

Lathamus discolor (Swift Parrot)

Mainly green in colour with red forehead, shoulders, throat and tail, the Swift Parrot is confined to the warm-dry habitats. It is migratory, spending the winter as far north as Queensland, an unusual habit for an island endemic. However, the Swift Parrot is not known to breed on the mainland.

Petroica vittata (Dusky Robin)

The sexes are indistinguishable in the field, both males and females retaining dull brown immature plumage. In other Tasmanian robins the male has black or slate upperparts and is red or pink on the underparts.

It typically occurs on the edges of forest or light scrub, with the greatest numbers appearing in the eastern parts of the State, and only sparingly in the cold-wet habitats, e.g. Lake Pedder.

Acanthiza ewingii (Tasmanian Thornbill)

A small bird, light brown with white flanks and under-tail. The Tasmanian Thornbill occurs in cold-wet habitats. With the Brown Thornbill, *A. pusilla*, it represents a double invasion of Tasmania by birds derived from a common stock. Although the two are similar in appearance, the Tasmanian

Thornbill has differentiated more from mainland forms and is regarded as a full species. The Brown Thornbill has differentiated only at a subspecies level which suggests it was later reaching Tasmania. This is substantiated by distinct habitat variations.

Acanthornis magnus (Scrub Tit)

Generally olive-brown with a white throat. The Scrub Tit forms a monotypic genus. It is restricted to habitats with a distinctive endemic vegetation (wet fern gullies) belonging to the cold-wet formations, suggesting that it has been in Tasmania for a very long time. This restriction to a particular habitat also suggests that it is a relict species that once had more widespread distribution. According to Ridpath and Moreau it is the only species that can be considered with any certainty to have been present in Tasmania during the last glaciation.

Sericornis humilis (Brown Scrub-Wren)

The Brown Scrub-Wren is deep brown in colour with a white spot on the edge of the wing. It occurs in thick cover close to the ground and is most numerous in the cold-wet habitats. Commonly found in wet sclerophyll forest, it occurs sparingly in dry sclerophyll forest.

Further research will probably show that the Brown Scrub-Wren is in fact not a distinct species but a large subspecies of the mainland Whitebrowed Scrub-Wren, *S. frontalis*.

Pardalotus striatus (Yellow-tipped Pardalote)

P. striatus, also known as the Striated Pardalote, is grey with a white-streaked black head and an orange-yellow bright spot on the wing. It is restricted to warm-dry habitats. Like the Swift Parrot, the Yellow-tipped Pardalote migrates to the mainland, although a few birds may winter in Tasmania.

P. quadragintus (Forty-spotted Pardalote)

Slightly larger than the Yellow-tipped Pardalote, the Forty-spotted Pardalote retains the juvenile plumage, being grey and olive-green with a yellow face. Known only to exist in warm-dry habitats at five localities—Flinders Island, Maria Island, Saltwater River, Tinderbox and North Bruny Island—the Forty-spotted Pardalote is the least numerous of the Tasmanian endemics. It is believed the total population does not exceed 1,000 individuals and that the species is close to extinction.

Melithreptus validirostris (Strong-billed Honeyeater)

Brownish-olive with a white crescent on a black neck. This honeyeater occurs in both dry and wet sclerophyll forests, particularly in the latter, wherever there are tall rough-barked trees. It obtains much insect food from the tree bark, a habit reminiscent of mainland tree-creeping birds which do not occur in Tasmania. In winter it forms noisy nomadic flocks.

M. affinis (Black-headed Honeyeater)

This bird is similar in appearance to the Strong-billed Honeyeater from which it can be distinguished by the absence of white on the back of the neck. Mainly a bird of the warm-dry habitats it forages among the foliage. Like the Strong-billed Honeyeater it forms nomadic winter flocks, at times entering suburban areas.

Meliphaga flavicollis (Yellow-throated Honeyeater)

The Yellow-throated Honeyeater is green with a yellow throat. It is very common in all forested areas and is another species that has adopted the bark-feeding habit to some extent. Pairs tend to remain in the same area throughout the year although a few birds, probably young birds, spend the winter in suburban areas.

Anthochaera paradoxa (Yellow Wattlebird)

The largest of all Australian honeyeaters, the Yellow Wattlebird is yellowish-brown with yellow wattles (comb). It breeds in dry and wet sclerophyll forests. Outside the breeding season it is nomadic following the blossoming of the various eucalypts and also coming into suburban gardens; large numbers congregate in east coast orchards. The Yellow Wattlebird is a succulent game bird and in most years there is an open season lasting a few days.

Strepera fuliginosa (Black Currawong)

Also known as the Black Jay, this bird is black with white tips and edges to its wings. It predominantly occurs in cold-wet formations and only sparingly throughout the dry sclerophyll forests of the Eastern Tiers. The Black Currawong can become remarkably tame, a characteristic often noted by visitors to Mount Field National Park or Waldheim.

S. arguta (Clinking Currawong)

A uniform dark grey in colour with white-edged and tipped tail. The Clinking Currawong (Black Magpie) is restricted to the warm-dry habitats of the eastern part of the State, being particularly plentiful in the low altitude heaths of the north-east.

Endemic Subspecies*Dromaius novaehollandiae* (Emu)

Reputed to be common in early settlement days, this flightless bird is now extinct. It must have arrived in Tasmania before the land bridge disappeared.

Synoicus australis (Brown Quail)

The Brown Quail has brown plumage with darker spots. A game bird, it is restricted to warm-dry habitats, low-altitude heath, savannah woodland and dry sclerophyll forest.

Rallus pectoralis (Lewin Water Rail)

Dark brown with black and white streaks. Rails and crakes are a difficult study in the field, being rarely seen denizens of reed-beds and marshes. As a result, the distribution of the Water Rail in Tasmania has not yet been established.

Aquila audax (Wedge-tailed Eagle)

Blackish-brown in colour, the Wedge-tailed Eagle is common in suitable localities although Sharland (1958) estimated that there were probably only 100 birds in Tasmania. As each pair has a home range of many square miles these magnificent birds can often be seen soaring and gliding in places as far apart as Cape Portland, the Hazards, Mount Olympus and even Knocklofty (a foothill of Mount Wellington). The Wedge-tailed Eagle is fully protected in Tasmania despite claims that it often kills lambs. It is by no means certain that the eagle kills healthy lambs although it will take weak, dying and dead animals. This is being investigated by the C.S.I.R.O. in Western Australia.

Ninox novaeseelandiae (Spotted Owl)

Sometimes called the Boobook or Morepork Owl, the Spotted Owl is dark brown with white spots. As with other owls it is rarely seen in daylight when it hides in hollow trees or thick scrub in the dry sclerophyll forest or around homesteads and towns where it also occurs. At night its call, 'more-pork', is a familiar sound of the bush.

Tyto novaehollandiae (Masked Owl)

Easily distinguished by its buff or chestnut coloured facial disk (white in mainland birds), the Masked Owl has a blackish-brown body spotted with white. It normally occurs in dry sclerophyll forest although it has been recorded in wet sclerophyll forest.

Platycercus eximius (Eastern Rosella)

Strikingly coloured with red, blue and green plumage, the Eastern Rosella has a very restricted distribution. Common only in savannah woodland, orchards and cultivated pastures it is confined to the eastern parts of the State and unknown in cold habitats. Elsewhere it has been replaced by the endemic Green Rosella to which it is closely related and with which it has been known to interbreed.

Pezoporus wallicus (Ground Parrot)

Bright green in colour with yellow spots. The Ground Parrot is found in the south-west where it inhabits the Button Grass Plains and coastal heath. Elsewhere it should be looked for in coastal heath although it is less common there than it once was because frequent burning of the heath has given rise to vegetation too sparse for its requirements. Tasmania is the stronghold of this rarely seen bird, the presence of which is best detected at dusk and dawn when, for a few minutes, it calls. The call is a plaintive low whistle of several distinct notes of ascending scale.

Podargus strigoides (Tawny Frogmouth)

During the day the Tawny Frogmouth remains motionless on its perch being very hard to detect with its camouflaging plumage of dappled brown and grey. Confined to the warmer habitats, it is common in the more open dry sclerophyll forests. It is insectivorous, hunting at dusk and during the night.

Aegotheles cristata (Owlet-Nightjar)

Blackish-grey in colour, the Owlet-Nightjar like the Tawny Frogmouth, is a nocturnal insect hunter. Its distribution is also similar. Although common it is less well-known, hiding in hollow trees during the day.

Rhipidura fuliginosa (Grey Fantail)

Grey and black with white outer tail feathers this well-known bird, also called the 'Cranky Fan', is widely distributed in a variety of habitats. It is a partial migrant to the mainland, with some birds remaining in Tasmania throughout winter when they become nomadic.

Pachycephala pectoralis (Golden Whistler)

The Golden Whistler has black and white plumage, the male having a yellow breast. In Tasmania it is common in both dry and wet sclerophyll forests but in many parts of south-eastern Australia it is found in the wetter habitats.

Colluricincla harmonica (Grey Shrike-Thrush)

Grey in colour as the name indicates, the Shrike-Thrush is a very well-known bird occurring in a wide range of habitats. In this State it searches the bark and branches of trees for insects, a habit it has not developed on the mainland.

Coracina novaehollandiae (Black-faced Cuckoo-Shrike)

This bird has smoke-grey plumage with a black face and throat. It is most common in dry sclerophyll forest. Few birds winter in Tasmania, the majority migrating to the mainland.

Cinclosoma punctatum (Spotted Quail-Thrush)

Mainly brown and grey with a long white-tipped tail. The Spotted Quail-Thrush occurs in the warmer habitats and is perhaps the only bird in Tasmania that is restricted to dry sclerophyll forest.

Epthianura albifrons (White-fronted Chat)

This quite common bird, with black and white plumage, appears to fill the 'wagtail' niche in Tasmania. It is common on river-flats and marshes but also occurs in poor, dry grassland provided some cover is available. Apparently the Chat has increased in numbers since 1880. The nature of its movements is not known but it does appear to move about to some extent.

Acanthiza pusilla (Brown Thornbill)

The Brown Thornbill is brown in colour with a black streaked breast. It is restricted to the warm-dry habitats. *A. pusilla* has differentiated only subspecifically from the mainland forms; however, with *A. ewingii* (Tasmanian Thornbill) it represents a double invasion of Tasmania by birds of the same stock. The Tasmanian Thornbill has differentiated sufficiently to be regarded as a separate species.

Megalurus gramineus (Little Grassbird)

The Little Grassbird, with its body a streaked brown colour, is camouflaged perfectly for its reed-bed habitat. It is uncommon mainly because of the lack of suitable habitat.

Stipiturus malachurus (Southern Emu Wren)

The Southern Emu Wren has brown plumage, the male also having a blue throat. Its habitat is patches of scrub surrounded by Button Grass although it does occur in reed beds. The Emu Wren is one of the few endemic subspecies that is restricted to the western part of the State.

Zosterops lateralis (Grey-breasted Silver Eye)

Green with a white-ringed eye, this bird breeds in many habitats, most commonly in low-altitude heath and wet sclerophyll forest. Outside the breeding season many birds migrate to the mainland while others form flocks which remain in Tasmania, moving wherever food is available.

Gliciphila melanops (Tawny-crowned Honeyeater)

The Tawny-crowned Honeyeater is a dull grey-brown with a light crown. It is restricted to coastal heath.

Acanthorhynchus tenuirostris (Eastern Spinebill)

Mainly reddish-brown in colour, the Eastern Spinebill is a common breeding species in low-altitude heath. It is one of the few Tasmanian honeyeaters that relies heavily on nectar and has a long, curved thin bill

particularly well suited to extracting nectar from tubular flowers. In winter it is nomadic, being common in dry sclerophyll forest, feeding on the heath *Epacris impressa*.

Myzantha melanocephala (Noisy Miner)

With a grey plumage and black crown the Noisy Miner is common in savanna woodland, orchards and cultivated pastures. The bird has a similar distribution to that of the Eastern Rosella occurring in colonies consisting of a breeding male and female with several non-breeding helpers which assist in feeding the young.

Corvus tasmanicus (Raven)

A large all-black bird often called a crow, the Raven occurs in a wide range of habitats in Tasmania. The Australian corvids classification has been revised recently and the only one that occurs in this State is the Forest Raven. Apparently one race occurs in Tasmania, the Otway Ranges and Wilsons Promontory and a second race in the New England tablelands, so perhaps the Tasmanian bird should no longer be considered an endemic subspecies. Its distribution is interesting, suggesting it is a relict species that was once more widespread.

Cracticus torquatus (Grey Butcherbird)

Generally black with grey upperparts, it is restricted to dry sclerophyll forests and habitats associated with man. A meat eater, the Grey Butcherbird will sometimes destroy small caged birds and will also catch Sparrows, Goldfinches and similar birds.

Gymnorhina hypoleuca (White-backed Magpie)

The White-backed Magpie is easily recognised with its strongly contrasting black and white plumage. It is a common bird that sometimes lives in large groups which have a single breeding pair and has a distribution similar to that of the Eastern Rosella and Noisy Miner. As the Tasmanian birds are so much smaller than those found on the mainland, some researchers regard the Magpie as distinct at the specific level. Once more widespread, it currently appears to be extending its range.

Summary

Of the fifteen endemic species only two (Tasmanian Thornbill and Scrub-Tit) occur exclusively in the cold-wet formations although two others, Brown Scrub-Wren and Black Currawong, are most numerous in these habitats. As far as the endemic subspecies are concerned only the Southern Emu Wren is restricted to these 'older' formations, although the Wedge-tailed Eagle and Ground Parrot are common.

Undoubtedly dry sclerophyll forests have the greatest number of common breeding species.

Because a greater proportion of endemic species than subspecies is found in the cold-wet formations, support is lent to the idea that these were the first to reach Tasmania. Ridpath and Moreau (1966) concluded that only one species, the Scrub-Tit, could with certainty have been present 18,000 years ago when the last glaciation was at its height. However, the evidence was inconclusive for the Tasmanian Thornbill and the Forty-spotted Pardalote.

The remaining species entered Tasmania some time after the height of the glaciation, many probably arriving across the land-bridge i.e. over 12,000 years ago.

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SEA STARS OF TASMANIA

The following article was contributed by Mr A. J. Dartnall, Curator of Invertebrate Zoology, Tasmanian Museum and Art Gallery.

Introduction

Sea Stars (echinoderms) belong to the family Asteroidea of the animal genus phylum *Echinodermata*; they are exclusively marine creatures and largely dwell on the sea bottom. The sea star body is composed of a central disc from which extend projections of the body called rays or arms; most species possess five arms although a greater number of arms are characteristic of many asteroids. Typically sea stars bear either spines or tubercles giving a warty or spiny appearance, hence the name echinoderm—spiny skin.

The most distinctive feature of all echinoderms is the presence of a system of coelomic canals and surface appendages comprising the water vascular system. In most echinoderms this hydraulic system operates the tube feet which are used in movement.

Some species are of commercial importance because they prey on shellfish utilised by man (e.g. scallops); they play an important part as scavengers and predators in the economy of the sea.

Tasmanian sea stars range in size from ten to fifteen mm in diameter to nearly half a metre across, with the length of the arms varying considerably. In most species the arm length varies from one to three times the diameter of the disc, but occasionally the arms may be so short that the body is nearly pentagonal.

Some sea stars possess pedicellariae (pincer-like appendages of various forms) spread over the body surface. They are used to capture small animals, to clean the body surface and possibly for defence.

Body colour varies greatly, from orange-yellow to purple, while some species are variously coloured in geometric patterns.

Although feeding methods vary, in all species the mouth is located in the centre of the underside (called the oral or actinal surface) of the disc. Sea stars of the family *Asteriidae* are famous for their ability to open bivalve molluscs (such as oysters and scallops) and to insert their stomachs through the gap into the shell digesting the mollusc while their stomachs are outside their own body. Some species spread the stomach over the substrate and graze on detritus, algae and small animal life, the food being carried to the digestive portion of the stomach by the action of the cilia which line the stomach wall.

Reproduction

The sexes of sea stars are usually separate, eggs and sperm being released freely into the surrounding sea water where fertilisation takes place. Most larvae (young) are planktonic and possess bilateral symmetry in contrast

to the radial symmetry of the adult sea star. After a time the larvae settle to the sea bed where they metamorphose to the adult form. Some species are hermaphrodite (i.e. each individual possesses gonads producing both eggs and sperms). Others have larvae which undergo a shortened development and are never planktonic. Some species brood their young, carrying them on specially modified parts of the body.

Sea stars exhibit considerable powers of regeneration and may even reproduce by fission. Any part of the arm can be regenerated, and destroyed portions of the central disc will be replaced. In consequence of these regenerative powers, sea stars removed from oyster beds are not broken apart and thrown into the sea but destroyed on land. Circumstantial evidence suggests that some sea stars may reproduce by fission when food is abundant and growth rapid, reproducing sexually at other times, although further investigation of this aspect is required.

History

Early Research

Perhaps the earliest mention of sea stars in Tasmania was made by Matthew Flinders who in the introduction to his *Voyage to Terra Australis* (1814) tells of the visit of Captain Marion du Fresne in 1772, '... and the curious picked up sea stars, sea eggs and a variety of fine and rare shells.'

By 1816 J. B. P. Lamarck had described and named three species of sea stars that are found around Tasmania and in 1840 J. E. Gray at the British Museum (Natural History) described a number of species from specimens sent to him.

About a dozen named species of Tasmanian sea stars were known by 1882. In evidence presented to the Royal Commission of the Fisheries of Tasmania (1882-83) concern can be noticed in the remark of William Tapner of Triabunna, '... the natural enemies of oysters are the stingaree, crabs, starfish ...', an opinion that has been voiced at intervals since that time and is of current interest.

Voyages of the Endeavour

A promising era of marine zoological exploration ended when the Fisheries Investigation Ship *Endeavour* left Macquarie Island on 3 December 1914. She was never seen again. H. C. Dannevig, Commonwealth Director of Fisheries and C. T. Harrison, Biologist, who came from Tasmania, were among the 21 hands lost with the *Endeavour*. In less than six years this ship had been used in exploration of a great portion of the sea bed from Queensland to Western Australia and southwards to Tasmania.

Hubert Lyman Clark

The collections of specimens accruing from F.I.S. *Endeavour* cruises were sent to various specialists for identification and description. In all, five instalments of echinoderms including 265 specimens of 44 species of sea stars were forwarded to Hubert Lyman Clark, then Curator of Echinoderms at the Museum of Comparative Zoology, Harvard. Of the 44 species 21 were new to science. The information listed by Clark added materially to knowledge of Tasmanian sea stars as collections had been made off Bruny Island, east of Maria Island, in Oyster Bay, off Babel Island, between Devonport and Launceston and off Mainwaring Cove on the west of Tasmania.

Clark contributed greatly to the study of Australian echinoderms. He visited Australia twice during the course of his investigations, including Hobart in 1929. Clark published his observations in a work entitled *Echinoderms from Australia* in 1938, the information for the section on Asteroidea coming from the examination of 4,270 specimens representing 46 genera and 104 species. In 1946, Clark published *The Echinoderm Fauna of Australia, Its Composition and Its Origin* which collated the information from his own researches and those of others to produce an account of the echinoderm fauna of the continent as known to that date.

Other Research

The only work on sea stars being carried out in Australia at that time was by A. A. Livingstone at the Australian Museum, Sydney. Livingstone described and named two species from Tasmania—*Asterina scobinata* and *A. inopinata*.

Since that time various other researchers have added to the information provided by H. L. Clark. Miss A. M. Clark of the British Museum (Natural History) in an account published in 1962 listed ten species of sea stars in which was the first record from Australia of the genus *Marginaster*.

The sea stars studied by Miss Clark were collected by the British, Australian and New Zealand Antarctic Research Expedition (1929-1931) under the command of Sir Douglas Mawson. Collections were made at three locations off Tasmania: near Cape Maatsuyker; off Maria Island; and off the Bay of Fires.

The Species

Recent work has shown that 35 species of 26 genera of sea stars occur around the coast of Tasmania.

Astropectinidae

To date only one species of burrowing sea star belonging to this family has been discovered in Tasmania. It is *Astropecten pectinatus* which was described by W. P. Sladen in 1883. Often pale pink in colour the species has five tapering arms and is flattened both above and below. The plates along the margins of the arms are conspicuous forming the outline of the arms, the lower series carrying long spines. *A. pectinatus* burrows in sand and sandy-mud bottoms with the aid of its pointed and suckerless tube feet. While most species rely on small items for food this form may engulf relatively large prey. It is found from New South Wales to Western Australia at a depth of between 30 and 280 metres.

Gonioplectinidae

Only one specimen of one species of this family (belonging to the genus *Ctenodiscus*) is known from Tasmania. This was taken in a fish trap in deep water off King Island. Although not yet proven, it is suggested that this as yet unnamed species of *Ctenodiscus* may be a brooding form. Species of this genus are known from both hemispheres; two species are known from South America, one from the Indo-Malay region and another is circumpolar in the northern oceans.

Radiasteridae

Radiaster gracilis was described by H. L. Clark in 1916 from specimens collected off the coast of Victoria by the F.I.S. *Endeavour*. The species was also collected in deep water off Maria Island in 1912 by the Australasian Antarctic Expedition and the record published in 1920.

Goniasteridae

Six species belonging to five genera of the family Goniasteridae are known from Tasmania. *Mediaster australiensis* was another species described by H. L. Clark from the *Endeavour* collections and has apparently not been met with since. *Nectria* is a characteristically Australian genus with *N. ocellata* (Perrier) the Tasmanian representative though some authorities consider that two species are present around the State. In *ocellata* the tubercles of the abactinal (upper) surface are modified to such an extent that they take the form of large flat tabulae surrounded by a row of granules and raised on a narrow stalk.

The biscuit stars belong to two genera. *Pentagonaster dübeni* Gray often has swollen plates near to the tip of the rays. It is not common in Tasmania. *Tosia australis* Gray is the smallest of the two biscuit stars in this genus and is commonly found under stones on the shore below mid-tide level. This species also has a morphological variant with swollen plates near the end of the arms which is called the *astrologorum* form *T. australis* rarely has more than six plates along each side of the body while the other species *Tosia magnifica* (Müller and Troschel) has between eight and sixteen plates.

The final species belonging to this family and said to be found in Tasmania is *Anthenea acuta* (Perrier). H. L. Clark mentioned in 1938 that he had seen one large specimen from Tasmania, but the species has not been found in the State since that time.

Oreasteridae

Asterodiscus truncatus Coleman is a vividly coloured species, its shades of yellow, blue, purple and red appearing to have been laid on with artist's enamels. It is included in the Tasmanian fauna on the basis of three specimens caught off the east coast of Tasmania during 1966 and 1967. Commonly known as the 'fire-brick sea star' this species ranges from the western end of the Great Australian Bight to New Zealand.

Asteropidae

Petricia vernicina (Lamarck) is found all round the coast of Tasmania from the lower levels of the shore to about 60 metres depth. The disc and arms are covered by a thick smooth skin through which protrude the large sessile pedicellariae of about five mm length. *P. vernicina* is usually mottled, dull red or purplish-brown and appears to feed on encrusting sponges.

Ophidiasteridae

This family contains two species known from Tasmania. *Austrofromia polypora* (H. L. Clark) has five tapering arms and is yellow or orange in colour. It has been dredged down to 160 metres, is said to be found in rocky areas associated with sponge growth and is occasionally found in the intertidal zone in Tasmania.

Pseudophidiaster rhyus H. L. Clark was first taken by the F.I.S. *Endeavour* at localities ranging from Oyster Bay, Tasmania, to the Great Australian Bight. Ten specimens were taken off Maria Island by the B.A.N.Z.A.R. Expedition in 1931. It is reported to be a dark purple in colour and is only known from water deeper than 110 metres.

Poraniidae

This family of sea stars is represented by two species from Tasmania. The first record of the genus *Marginaster* was based on a single specimen taken in deep water off Maria Island, again by the B.A.N.Z.A.R. Expedition.

Miss A. M. Clark described the specimen, but did not give it a specific name noting only that it was most closely related to *M. paucispinus* Fisher from the vicinity of Hong Kong. A further record of a sea star from the Kermadec Islands that may be the same species was published by D. G. McNight of the New Zealand Oceanographic Institute in 1968.

A second species belonging to the genus, but only known from intertidal levels is *M. littoralis* Dartnall. It has only been found within the confines of the Derwent Estuary so far. The genus typically inhabits deeper waters and it is not known whether *M. littoralis* has been imported into the Derwent from deep water or localities outside the State.

Asterinidae

Ten species of three genera belonging to this family are known from Tasmania. The genus *Asterina*, from which the family takes its name, is represented by three small species found at low tide levels on the shore and sometimes in shallow offshore waters. *Asterina inopinata* Livingstone is a small pentagonal sea star very similar in appearance to *A. atypoida* H. L. Clark. The former ranges from northern Tasmania to New South Wales, the latter from Tasmania to South Australia. *A. scobinata* Livingstone ranges from Victoria to Tasmania. Thus, these three species show a three-spoked pattern of distribution of which Bass Strait is the geographic hub. Hermaphrodite specimens of *A. scobinata* have been found, but it is not known if this is a constant feature of the species.

Six species of cushion star of the genus *Patiriella* are found around the State. *Patiriella exigua* (Lamarck) is found in the intertidal zone on all coasts and ranges north to Morton Bay and west to Port Lincoln in South Australia. It is also found in South Africa and on the isolated islands of New Amsterdam and St Paul which lie in the Indian Ocean between Africa and Australia. *P. vivipara* Dartnall, an hermaphrodite species in which the larvae develop inside the adult, is only known from south-eastern Tasmania and is a true Tasmanian endemic. *P. calcar* (Lamarck) with its eight to eleven rays and varied and colourful geometric patterns is common on rocky shores all around Tasmania. Of the six rayed species of *Patiriella*, the deep purple *P. brevispina* H. L. Clark is only known from the north coast of the State though it ranges to Western Australia and New South Wales. The variously coloured, geometrically patterned, *P. gunnii* (Gray) was described from specimens collected at Sandy Bay. It is no longer found so close to Hobart, but is known from intertidal levels and in shallow water all round Tasmania.

The common intertidal sea star of New Zealand *P. regularis* (Verrill) is found in south-eastern Tasmania within the area defined by the Tasman Bridge in the north, Slopem Main in the east and Bruny Island and the Huon River in the west. *P. regularis* was probably brought into Tasmania with New Zealand oysters imported from Bluff on the ships of the 'Horseshoe Run' to bolster a failing industry and satisfy local demand. It has certainly been a member of the Tasmanian fauna since 1930 and is one of a number of New Zealand animals that have settled successfully in the marine environment of Tasmania.

It may be that *P. regularis* has competed with native species of the genus to their detriment. *P. exigua* and *P. calcar* were found around Hobart in the early years of this century. *P. exigua* was noted by Professor T. T. Flynn of the University of Tasmania to be '... common on the rocks along the Domain near Government House...' in 1911 and H. L. Clark in 1929 recorded both

P. exigua and *P. calcar* from Hobart. *P. exigua* is now found no nearer Hobart than Carlton Bluff and Dennes Point, Bruny Island and *P. calcar* has upstream limits in the Derwent near Tarooma on one shore and Droughty Point on the other.

However, *P. regularis* is known to be more tolerant of adverse conditions and the absence of *P. exigua* and *P. calcar* may be due to changes in the Derwent Estuary, perhaps caused by catchment control or increasing disposal of wastes into the estuary, *P. regularis* having taken the place vacated by the native species. The New Zealand species has extended its range during four years of observation and if its ubiquitous distribution in New Zealand be taken as a model there seems little reason why it should not spread, eventually, to the remainder of the State.

Paranepanthia grandis (H. L. Clark) is a comparatively large member of the family attaining about 90 mm. in diameter and densely covered with groups of fine spines. It is an inhabitant of shallow waters to about 40 metres, but rarely collected in Tasmania though it probably occurs on all coasts.

Echinasteridae

The Echinasteridae contain the perplexing genus *Henricia*, specimens of which are known from Bass Strait and the east coast of Tasmania. Their true identity is still in doubt.

Plectaster, which contains only one species, *P. decanus* (Müller and Troschel) is confined to the southern side of the continent of Australia. Recent collecting at Rocky Cape and Jacobs Boat Harbour on the north-west coast of Tasmania has confirmed that the species is a member of our marine fauna.

Solasteridae

Crossaster multispinus H. L. Clark has ten or eleven arms and was collected by the F.I.S. *Endeavour* off Bruny Island. It is now considered to be the same species as *C. japonicus* (Fisher) which is widely distributed in deep water being known from Eastern Siberia, Japan, Australia and New Zealand.

Asteriidae

This family is widely distributed and is a conspicuous feature of the sea star fauna of the northern hemisphere, about forty species being recorded by A. M. D'yakonov in his *Sea Stars of the U.S.S.R. Seas*. Eight species of seven genera are known from Tasmania.

Stylasterias reticulata (H. L. Clark) was, until recently, only known from deep water off Maria Island being taken by the F.I.S. *Endeavour* and the B.A.N.Z.A.R. Expedition. Dr H. E. S. Clark, of the Victorian University of Wellington, has recently reported that five specimens of this species were collected off the west coast of the North Island of New Zealand by the U.S.N.S. Research Vessel *Eltanin* in depths of between 167 and 421 metres.

A characteristic of *S. reticulata* (H. L. Clark) is its felipedal pedicellariae in which the opposing jaws are shaped like cat claws.

The largest Tasmanian sea star, *Astrostele scabra* (Hutton) which may measure almost half a metre across, is found in both Tasmania and New Zealand. No young of this species have been found in Tasmania so far and details of its distribution and ecology remain to be worked out. These details may be of interest because, occasionally at least, it is a predator of abalone.

Coscinasterias calamaria (Gray), the seven to eleven armed sea star which habitually reproduces by fission, is very common in Tasmania. It is also known from New Zealand, continental Australia and South Africa. The

species has acquired a measure of infamy because it is known to prey on scallops and oysters. No critical data have yet been published on the effect of *C. calamaria* on the scallop industry. Most evidence is inductive having been gleaned incidentally to studies on commercial scallops.

During June 1967 officers of the Sea Fisheries Division of the Department of Agriculture on one day made fourteen dredge hauls in Promise Bay for a total time on the sea bed of 71 minutes. From these hauls 225 scallops were taken and 608 sea stars. The following day seventeen dredge hauls were made for a total time of 145 minutes. This dredge series yielded 243 scallops and 445 sea stars. These figures show that the method of dredging employed caught more sea stars than scallops which presumably represented the situation on the sea bottom in Promise Bay at that time.

There are no data available to show whether *C. calamaria* are active predators on scallops causing a decline in the populations of scallop beds or whether, acting as scavengers, they clear up a senile bed which has already passed its peak of production. Sea stars are also known to be attracted to a food source when tissues are broken under water. Therefore if commercial dredging breaks open scallops on the sea bed it may be reasonable to assume that sea stars down-current of the bed will move towards the food source. All these suggestions are conjecture in regard to *C. calamaria*. The rate of feeding in the wild is also unknown. A single specimen of *C. calamaria* about 200 mm. in diameter, and kept in an aquarium at the Tasmanian Museum, took about 24 hours to digest a mussel about 25 mm. in length.

It appears that there is an urgent need for a planned investigation into the biology of *C. calamaria* which has been implicated, on no critical evidence, as a danger to one of Tasmania's fisheries.

Australiaster dubius (H. L. Clark) has some superficial resemblance to the preceding species, but has five rays only and is pale straw coloured with orange tints especially around the spines of the upper surface. It is very common in some places off the east coast of Tasmania but the species was thought to be rare until recent information gave some indication of its true status. It is almost certain that accounts of sea stars from scallop dredges off the east coast will not have differentiated between *C. calamaria* and *A. dubius* about which we know even less.

Smilasterias irregularis H. L. Clark is known from South Australia to Victoria. Its place in the Tasmanian marine fauna depends on a single specimen taken off Devonport in 1970 and specimens from Jacobs Boat Harbour and Cape Portland taken in 1971. The animal has five arms and is a variegated light and dark red on the upper surface.

Two small species of asteriid sea stars are found in Tasmania: *Allostichaster polyplax* (Müller and Troschel); and *A. regularis* H. L. Clark. The former has eight arms, but is rarely symmetrical because it is fissiparous and most specimens collected have three, four or five regenerating arms. Less common than *A. polyplax* and always regularly pentamerous *A. regularis* has been collected at various localities in the State.

There is some doubt about the status of the final species of this account. *Uniophora sinusoida* (Perrier) is the name used at present for this very variable sea star which is a common inhabitant of shallow water and is occasionally found on the shore. The genus is endemic to the southern waters of Australia.

Summary

The composition of the sea star fauna of Tasmania shows more similarities to that of south-eastern Australia than to any other area. As the relationships of the Australian sea star fauna are generally to the north it may be said, with some justification, that the origins of the Tasmanian sea star fauna lie in the Indo-Malay area. Some species of sea stars, such as *C. japonicus* and the species of *Ctenodiscus* have wide distributions in both hemispheres. Others have circum-polar, southern hemisphere relationships. The relationships of sea star species with such a distribution run from west to east and it has been suggested that the currents of the west-wind drift have swept species eastward, Australia and Tasmania standing as a donor of sea star species to New Zealand, New Zealand to South America and so on.

Sea stars may be used as indicators of changes in the marine environment. Evidence from the study of distribution of sea stars has already been used to define zoogeographical areas. For example, the limits of the Maugean, the marine zoogeographic area to which Tasmania belongs, are reflected in the known distributions of our native sea stars.

On a more local level the distribution and composition of the sea star fauna will reflect local conditions. For example, as most sea stars are intolerant of reduced salinity their absence over a period of time may indicate changes in the duration and magnitude of fresh water discharge into the marine environment. Changes in the species composition of an area may reflect changes in hydrology, sedimentation and current characteristics. As the Tasmanian sea star fauna is comparatively well known, and identification of given species presents no difficulty the common species may be useful indicators of environmental change and for pollution control.

The influence of one, perhaps two, species on an important sector of the fishing industry is not supported by critical evidence and further studies are needed.

(Further reading: H. L. Clark, 1946—*The Echinoderm Fauna of Australia*, Carnegie Institution of Washington. Dakin, W. J. et al., 1952—*Australian Seashores*, (Angus and Robertson, Sydney). Papers and articles about sea stars, by various authors, can be found in *Australian Natural History*, (The Australian Museum, Sydney) and in the journals issued by the Royal Society of Tasmania; the National Museum of Victoria; the Linnean Society of New South Wales; and the South Australian Museum. The most recent reference work on the biology of echinoderms and a valuable source book for their study is *Physiology of Echinodermata*, edited by R. A. Boolootian, (John Wiley).

FAUNA OF MARIA ISLAND

Introduction

The relative isolation of Maria Island, lying a little more than three miles off the east coast of Tasmania, provides a natural haven for fauna.

Covering some 23,900 acres, the island is separated from Tasmania by the shallow Mercury Passage and consists of two well defined islands, separated by a long and narrow isthmus, the topographies of which are quite dissimilar. The south island is mainly low land rising on the western side to a 1,000-foot high peak. A ridge of high land forms the spine of the southern peninsula terminating at Cape Peron. In contrast, the northern island is dominated by a steep and rugged central ridge with the peaks of Mount Bishop and Clerk (2,000 feet high) in the north and Mt Maria (2,329 feet) towards the centre.

A detailed history of Maria Island is contained in the 1971 *Year Book*.

Maria Island is administered by the National Parks and Wildlife Service which in 1971 replaced the former Animals and Birds Protection and the Scenery Preservation Boards. The Service was set up to administer and control: national parks, scenic and historic reserves, fauna reserves and sanctuaries; the conservation and management of native wildlife; and to introduce game birds and animals to the areas controlled by the Service.

Government approval was given in 1965 to convert Maria Island into a wildlife sanctuary following submissions from the Animals and Birds Protection Board. As leases and freeholds became available they were purchased and by 1971 the Government had become the sole proprietor.

The Board considered the island a suitable sanctuary as it offered a wide variety of habitats ranging from open forest, scrub and thick forests to cleared paddocks with fern gullies. The island has an ample water supply.

Fauna

Marsupials are not as common on Maria Island as would appear normal for such a suitable environment and there is no apparent explanation for the scarcity of such well-distributed and common species as the Bennett's Wallaby, the Wombat and the Native Cat.

In contrast the island is comparatively rich in avifauna possibly due to the diversity of habitat and ecological niches available and the apparent lack of predators.

Mammals

Trichosurus vulpecula (Brush Possum)

The Brush Possum is thought not to have been present originally but was recently introduced by a grazier, J. H. Howells. It is now frequently seen in the Darlington area i.e. the northern tip of the island. The Brush Possum is not so exclusively arboreal (tree dwelling) as the Ringtail Possum and spends much of its time on the ground. Easily distinguished by its bushy tail which has a naked inner surface at the end, it ranges in colour from grey through brown to black.

Pseudocheirus convolutor (Ringtail Possum)

The Ringtail Possum has not been recently sighted on the island but residents have reported some evidence of its presence. Although no recent reports have been confirmed the species probably occurs on the lower slopes of the main ridge between Mt Maria and the twin peaks of Mt Bishop and Clerk. Similar in body colouring to the Brush Possum it varies from dark grey to dark brown or even black, but can be distinguished by its tail which is long, covered by short hair and has a prominent white tip.

Cercaetus nanus (Pigmy Possum)

The Pigmy Possum has been rarely sighted on Maria Island but is known to exist there. Less than six inches in body length, it nests in the bark of trees and lives on nectar, blossom and insects.

Potorous tridactylus (Potoroo)

Tracks have been observed in a sandy area one and a half miles north of Chinaman's Bay but trappings have failed to produce any specimens of Potoroo. Two male species were imported from the Tasmanian mainland and released in thick cover on Bernacchi's Creek in 1969. The Potoroo can be distinguished from other Rat Kangaroos by the hind foot which is shorter than the head. It has a long snout, small protruding eyes and a long tail which frequently bears a white tip. The usual colour is dark brown with a greyish-brown undersurface.

Wallabia rufogrisea (Bennett's Wallaby)

The presence of Bennett's Wallaby on the island has not been recorded but a programme of introduction was commenced in January 1969 with eight animals being held in a breeding enclosure north-east of Darlington. The wallaby has a long face and ears, the tips of the ears and the snout being dark. The usual colour is reddish brown with a grey undersurface. It inhabits relatively open country and is often wrongly called a kangaroo.

Thylogale billardieri (Pademelon)

The Pademelon is quite common on the island particularly in the thicker scrubland along the western side of the north island. This species is distinguished from the wallaby by its short ears, stout compact form and rather short snout. The tail is about half the length of the head and body. Pademelons vary in colour through many shades of brown but the most common colour is a dark reddish-brown.

Macropus giganteus tasmaniensis (Forester Kangaroo)

The Forester Kangaroo, the only endemic Tasmanian Kangaroo, was not known to exist on the island but in January and March 1969 a total of fifteen animals were introduced into a special breeding enclosure. It is easily recognised by: its large size (often standing over five feet in height); its usual colour (grizzled grey); and its coarse fur.

Phascolomys ursinus (Wombat)

No definite recording has been made of the Wombat although there have been numerous unconfirmed sightings. The Wombat is squat and bear-like in shape, powerfully built with very prominent teeth and a small tail, usually brown in colour although grey or buff variations occur. The animal usually lives in a burrow, although caves or piles of rock also adequately serve as a den.

Tachyglossus setosus (Echidna)

The Echidna has been sighted rarely on the island but diggings have been found in several places. Easily recognised by its characteristic spiny body, the Echidna is usually light brown in colour.

Other Mammals

Also present on the island are the Water Rat (*Hydromys chrysogaster*), Eastern Swamp Rat (*Rattus lutreolus*) and a small Bat (*Eptesicus pumilus*). The Fallow Deer was introduced about 1965 and is now believed to number four or five. The Ship Rat (*Rattus rattus*) and the House Mouse (*Mus musculus*) are abundant in the Darlington area.

Avifauna*Introduction*

Eighty-nine species of avifauna have been observed on Maria Island, and two have been introduced for breeding purposes (the Emu, *Dromaius novaehollandiae* and the Cape Barren Goose, *Cereopsis novaehollandiae*).

The island's ecological history has followed fairly closely that of the Bass Strait islands but because of its geographical proximity to the Tasmanian mainland the exchange of avifauna to Maria Island has been greater than to either King or Flinders Island.

The species and distribution patterns found on Maria Island are similar to those found in dry sclerophyll habitats on the mainland. However, several species dwelling in the mainland dry sclerophyll habitat appear never to have crossed the water barrier (Mercury Passage) to the island although the habitat appears to be suitable for the establishment of island colonies.

Endemic Avifauna

Twelve species and fourteen subspecies of birds endemic to Tasmania are represented on Maria Island. None are endemic to the island alone. The following table lists the endemic birds by species and subspecies. A discussion of their physical description and habitat appears elsewhere in this *Year Book* in the article 'The Endemic Birds of Tasmania'.

Endemic Tasmanian Birds found on Maria Island (a)

Species	Subspecies
Green Rosella (<i>Platycercus caledonicus</i>)	Brown Quail (<i>Synoicus australis</i>)
Swift Parrot (<i>Lathamus discolor</i>)	Spotted Owl (<i>Ninox novaeseelandiae</i>)
Dusky Robin (<i>Petroica vittata</i>)	Masked Owl (<i>Tyto novaehollandiae</i>)
Tasmanian Thornbill (<i>Acanthiza ewingi</i>)	Ground Parrot (<i>Pezoporus wallicus</i>)
Brown Scrub-wren (<i>Sericornis humilis</i>)	Grey Fantail (<i>Rhipidura fuliginosa</i>)
Forty Spotted Pardalote (<i>Pardalotus quadragintus</i>)	Golden Whistler (<i>Pachycephala pectoralis</i>)
Strong-billed Honeyeater (<i>Melithreptus validirostris</i>)	Black-faced Cuckoo Shrike (<i>Coracina novaehollandiae</i>)
Black-headed Honeyeater (<i>Melithreptus affinis</i>)	Spotted Quail-thrush (<i>Cinclosoma punctatum</i>)
Yellow-throated Honeyeater (<i>Meliphaga flavicollis</i>)	White-fronted Chat (<i>Eptibianura albifrons</i>)
Yellow Wattle-bird (<i>Anthochaera paradoxa</i>)	Silver-eye (<i>Zosterops lateralis</i>)
Black Currawong (<i>Strepera fuliginosa</i>)	Eastern Spinebill (<i>Acanthorhynchus tenuirostris</i>)
Clinking Currawong (<i>Strepera arguta</i>)	Noisy Miner (<i>Myzantha melanocephala</i>)
	White-fronted Magpie (<i>Gymnorhina hypoleuca</i>)

(a) No birds listed are found exclusively on Maria Island.

Of the remaining vertebrate groups, fish are doubtless represented by many marine species around the shores of Maria Island. Three species have been noted in the fresh water of Bernacchi's Creek. These include the Spotted Mountain Trout (*Galaxias truttaceus*), a species of Goby and a member of the Hardhead family, *Atherinidae*, at present unidentified. The Spotted Mountain Trout is present in many of the smaller permanent pools along the main creek systems and is plentiful in the dam to the east of Darlington.

Reptiles and Amphibians

All three species of Tasmanian snakes, Tiger (*Notechis ater*), Copperhead (*Denisonia superba*) and Whip (*D. coronoides*) are found on Maria Island.

Of the known eleven species of Tasmanian lizards seven have been recorded on the island (*Tiliqua nigrolutea*, *T. casuarinae*, *Leiopisma metallica*, *L. ocellata*, *L. pretiosa* and *Egernia whitii*).

Two tree-frogs are among the four species of frog which have been recorded on the island. Those found are the Green Tree-frog (*Hyla aurea*), Brown Tree-frog (*H. ewingii*), Brown Froglet (*Crinia signifera*) and Banjo Frog (*Limnodynastes dorsalis*).

Invertebrate Fauna

Four species of Crustacea have been identified, including the Freshwater Lobster (*Astacopsis franklinii*) and three shore-crabs. Also represented are eight species of spider including the Red-backed Spider (*Latrodectus hasseltii*), Huntsman (*Delena cancerides*) and the Wolf Spider (*Lycosa tasmanica*).

(Further reading: *The Animals and Birds Protection Board, Maria Island.*)

Chapter 3

GOVERNMENT AND ADMINISTRATION

GOVERNMENT IN TASMANIA

Historical Summary

In its short history, Tasmania has experienced diverse modes of government; beginning with autocratic rule, it graduated to responsible self-government as a British colony and finally surrendered some sovereign powers to take its place as an original State of the Australian Commonwealth.

The evolution of the system of bi-cameral responsible government within a Federal system falls into five distinct phases:

1803-1825: The island was part of the colony of New South Wales and its lieutenant-governors and commandants were subordinate to the Governor in Sydney.

1825-1851: On 14 July 1825, Van Diemen's Land was created a separate colony with a Lieutenant-Governor directly responsible to the Secretary of State in London. A nominated Legislative Council was established.

1851-1856: The passage of the *Australian Constitution Act* 1850 by the Parliament in London was followed by the establishment of a new Legislative Council in which sixteen members were elected and eight were nominees of the Lieutenant-Governor; the newly constituted Council first sat on 1 January 1852.

1856-1901: By the *Constitution Act* 1854, two houses of parliament, the House of Assembly and the Legislative Council were established, both houses being elected. The first Parliament sat on 2 December 1856 (the first year in which the island was officially called Tasmania); representatives of the Crown carried the title of Governor.

1901: The Tasmanian Constitution was limited by the establishment of the Commonwealth Constitution. (The *Commonwealth of Australia Constitution Act* 1900 granted legislative and executive powers upon certain specified matters to the Commonwealth Parliament and Government, some of them exclusively, and provision was made that, in the case of inconsistency of valid laws, the Commonwealth law should prevail.) In effect, the Parliament of Tasmania may make laws operative within the State upon all matters not within the exclusive power of the Commonwealth Parliament but, on those matters for which the Commonwealth may also legislate, the Tasmanian law may be superseded by the passing of a Commonwealth Act.

Introduction

Government in Tasmania is exercised at three levels:

- (i) The Commonwealth, with authority based on a written constitution, and centred in Canberra.
- (ii) The State, with residual powers, and centred in Hobart.
- (iii) The Cities and Municipalities, with authority derived from State Acts, and operating in forty-nine subdivisions of the State.

This chapter deals primarily with the State Government and with Tasmanian representation in the Commonwealth Parliament. The administration of the cities and municipalities is described in Chapter 4, 'Local Government'.

Tasmanian Representation in Commonwealth Parliament

The Parliament of the Commonwealth of Australia consists of the Queen, a Senate and a House of Representatives. The Queen is represented in Australia by the Governor-General.

The Senate

The founders of the Australian Constitution had in mind that the Senate should give expression to the interests of the States as partners in the federation; in other words, the Senate should be a States' house. Accordingly the proportional representation suggested by the varying populations of the States was disregarded, and it was provided that each State should be represented by six senators; the first Senate in the first Parliament comprised thirty-six members of whom six represented Tasmania. The numbers remained unchanged until the Commonwealth *Representation Act* 1948 when each State became eligible to elect ten senators.

The Senate was also envisaged as a house of review and accordingly continuity of membership was provided by requiring only one-half of the Senate to retire every three years, and for each Senator's term to be six years. If the normal pattern of three-yearly rotational retirement is broken by a double dissolution of both Houses, provision exists to elect a complete Senate with members divided into two equal classes: senators of the first class with a three-year term and senators of the second class with a six-year term. (The basis for this classification is the order in which the senators are declared elected.) After a normal rotational election, senators' terms commence from the following first day of July; in the case of an election for the whole Senate, terms commence from the first day of July preceding the election.

The House of Representatives

In designing the House of Representatives, the founders envisaged a legislative body representing the national interest and provided that the number of members chosen in the several States must be in proportion to population, but that no original State should have less than five members. The first House of Representatives in 1901 had 75 members of whom five were elected in Tasmania. The term of office was set at three years.

The *Representation Act* 1948 increased the House of Representatives to 123, although only 121 were elected from the States; the Northern Territory and the Australian Capital Territory each had one member with restricted voting powers. At 1 January 1972, the House of Representatives stood at 125 members, 123 from the States and two representing the Northern Territory and the Australian Capital Territory respectively. Throughout the whole period since Federation, Tasmanian representation has remained constant at five members.

Electoral redistributions were undertaken soon after the 1947, 1954 and 1966 population censuses, the most recent being carried out by the Electoral Commissioners in 1968. The 1968 recommendations were accepted by the Federal Parliament and their net effect was to increase membership of the Federal House of Representatives by one to 125 members. The 1969 Federal House of Representatives election was the first Commonwealth election to be conducted in accordance with the new boundaries and subsequent to the election

State representation in the House of Representatives became: N.S.W., 45; Victoria, 34; Queensland, eighteen; South Australia, twelve; W.A., nine; Tasmania, five. The A.C.T. and Northern Territory each returned one member with full voting rights.

The following table indicates the state of the House of Representatives at the election immediately following an electoral redistribution.

Membership—House of Representatives

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T. (a)	A.C.T. (b)	Total
1948 ..	28	20	10	6	5	5	1	..	75
1949 (c) ..	47	33	18	10	8	5	1	1	123
1955 (c) ..	46	33	18	11	9	5	1	1	124
1969 (c) ..	45	34	18	12	9	5	1	1	125

(a) Representative in House since 1922; full voting rights granted 1969.

(b) Representative in House since 1949; full voting rights granted 1966.

(c) Election following an electoral redistribution.

Qualifications of Voters for Commonwealth Elections

An elector on a Federal roll is required by law to vote both in elections for the House of Representatives and for the Senate. An elector is any person, male or female, aged at least twenty-one years who is a British subject, who has lived in Australia for six months continuously and whose name appears on the roll. Residence in an electoral sub-division for at least one month is necessary to enable a qualified person to enrol. Enrolment is compulsory. All servicemen on active service overseas, irrespective of age, can vote.

Qualifications of Candidates—Either Federal House

Qualifications necessary for membership of either House of the Commonwealth Parliament are possessed by any British subject, twenty-one years of age or over, who has resided in the Commonwealth for at least three years and who is, or who is qualified to become, an elector of the Commonwealth.

The term of office for a member of the House of Representatives is three years unless the House is dissolved earlier by the Governor-General.

Disqualification as Elector or Member

Grounds for disqualification as an elector include being of unsound mind, or being convicted and under sentence for offences punishable by imprisonment for a year or longer. Grounds for disqualification as a member of either House include these prohibitions and also the following: membership of the other House, being an undischarged bankrupt or insolvent, holding office for profit under the Crown (with certain exceptions), or having pecuniary interest in any agreement with the public service of the Commonwealth except as a member of an incorporated company of more than 25 persons.

Elections for the Senate

In Senate elections each State is an electorate. Electors are required to cast a vote for every candidate standing within the State in order of their preference, and election of members is carried out in accordance with the principles of proportional representation by the single transferable vote (see 'Elections for House of Assembly' in the 1971 *Year Book* for a description of similar electoral principles). If a vacancy occurs in the Senate, the appropriate State Government nominates a replacement who sits until the next Commonwealth general election (either for the House of Representatives or for the

Senate), when an election is held to fill the vacancy. It is usual for appointed replacements to be of the same party as those they replace, although no law exists to require it.

If a senator fills a vacancy through an election held at the same time as an election for the House of Representatives, his term will be the same as if the vacating member's term were to run its full course. If the vacant seat is contested at an ordinary Senate election, then six, instead of five candidates, will be elected in the State affected and the senator last elected will fill the vacancy for a term shorter than the full six years.

The following table lists the senators for Tasmania together with party affiliation and year of retirement:

Senate—Tasmanian Members

Senator	Party Affiliation	Retires in Year
Devitt, Donald Michael	A.L.P.	1977
Lillico, Alexander Elliot Davidson	Liberal	1977
Marriott, John Edward	Liberal	1977
O'Byrne, Justin Hilary	A.L.P.	1977
Poke, Albert George	A.L.P.	1974
Rae, Peter Elliot	Liberal	1974
Townley, Michael	Independent	1977
Turnbull, Reginald John David	Independent	1974
Wriedt, Kenneth Shaw	A.L.P.	1974
Wright, the Hon. Reginald Charles (a)	Liberal	1974

(a) Commonwealth Minister for Works.

Elections for the House of Representatives

The Commonwealth is divided into 125 single-member electorates and electors are required to cast a vote for every candidate standing within the electorate in order of their preference. Election of members is carried out in accordance with the principles of the absolute majority through use of the alternative vote (see 'Elections for Legislative Council' for a description of similar electoral principles). If a vacancy occurs in the House of Representatives, it is filled by holding a by-election in the electorate concerned. The last general election was held on 25 October 1969.

The following table lists the Tasmanian members of the House of Representatives together with the party affiliation and electorate of each member:

House of Representatives—Tasmanian Members

Member	Party Affiliation	Electoral Division
Barnard, Lance Herbert (a)	A.L.P.	Bass
Davies, Ronald	A.L.P.	Braddon
Duthie, Gilbert William Arthur	A.L.P.	Wilmot
Sherry, Raymond Henry	A.L.P.	Franklin
Solomon, Robert John	Liberal	Denison

(a) Deputy Leader of Federal Opposition.

Division of Power

Under the *Commonwealth of Australia Act* 1900, the State of Tasmania surrendered part of its sovereignty and it was possible, at that point in time, to classify the totality of powers to be vested in the Commonwealth and the State as follows:

- (i) Exclusive powers to be exercised by the Commonwealth alone.
- (ii) Concurrent powers to be exercised both by the Commonwealth and the State (subject to the supremacy of Commonwealth law in cases of inconsistency).
- (iii) Residual powers to be exercised by the State.

Since the establishment of the Commonwealth of Australia, there have been considerable changes in functions actually performed by the two Governments due to constitutional amendments and to inter-governmental agreements affecting function. It will suffice, therefore, to list the main fields of activity of the Commonwealth Government today:

Foreign affairs and diplomatic representation; maintenance of the armed forces; customs and excise; posts and telegraphs; control of broadcasting and television; control of civil aviation; repatriation of ex-servicemen; immigration; industrial arbitration for national industries; control of coinage and currency; overseas trade promotion; employment service; age, invalid and widows' pensions; national health benefits; federal territories and overseas dependencies; census and statistics; meteorological service; Commonwealth courts and police; control of banking; collection of sales and income taxes; housing assistance and war service homes; scientific and industrial research; management of State and National debt; lighthouses and navigation. (For a fuller treatment of this subject, the *Constitution* in Chapter 1 of the Commonwealth *Year Book* is recommended.)

The departments, authorities, etc. of the Tasmanian Government are listed in a later section of this chapter headed 'Administration'.

Governor

Introduction

Democratic forms of government exhibit great variety but, with regard to the selection and role of the head of State, two clearly conflicting concepts can be discerned. In the American tradition, the head of State is elected and must necessarily play an active role in party politics. In the British tradition, the head of State is the holder of hereditary office and is expected to be above and beyond party politics. Tasmania follows the British tradition and accepts as its Queen, Elizabeth the Second. Her Majesty appoints the Governor who acts as head of State, generally for a five-year term. The relationship existing between the Queen and the British Parliament is broadly the same as that existing between the Governor and the Tasmanian Parliament.

Authority

The Governors' authority is derived from Letters Patent (issued in 1900) under the Great Seal of the United Kingdom, from the Commissions of Appointment and from the Governors' Instructions issued under the Royal Sign Manual and Signet.

Powers and Duties

The Governor summons and prorogues Parliament; in special circumstances he may dissolve it after considering the advice of his Premier. Bills which have passed all stages in Parliament are submitted to the Governor for his assent although there are some subjects which are specifically reserved for the Royal Assent (e.g. a Bill granting land or money to the Governor). He

opens each session of Parliament by outlining the legislative programme of the Government which, irrespective of its party affiliation, he refers to as 'My Government', but takes no other part in the sittings of either House.

His executive powers include the appointment of Ministers of the Crown, judges and other important State officers but not those whose appointments may be made by certain statutory corporations. By appointing Ministers of the Crown, the Governor creates the Executive Council of the day and he is required by his instructions to be guided by the advice of this body. Should he feel it necessary to act against the advice of the Executive Council, he may do so, but the reasons for such action must be immediately reported to the Queen. The Governors' relations with the Executive Council and with Cabinet are more fully discussed in the section headed 'The Cabinet and Executive Government'.

The Governor has the power to pardon, reprieve and remit sentences and fines. In capital cases, he is required to seek the advice of the Executive Council and, in other cases, the advice of at least one Minister. He also has the power to appoint a deputy to act in his stead during his absence (for a period of less than one month) from the seat of government, whether within or outside the State. If the Governor is to be absent for a period in excess of one month, the Chief Justice, by virtue of the Dormant Commission, acts as Administrator of the Government. Further reference to the Governor's discretionary powers will be found under the section headed 'Dissolution of Parliament'. On all official State occasions, he performs the ceremonial functions as the representative of the Crown, and so becomes a focal point and unifying symbol of the community.

Present Governor

All Tasmanian Governors since the first settlement have come from the United Kingdom, although in some other States and the Commonwealth, Australians either hold or have held the vice-regal office. Lt.-General Sir Edric Bastyan, a former Governor of South Australia, was sworn-in on 2 December 1968 as Governor of Tasmania succeeding Lt-General Sir Charles Gairdner.

Lieutenant-General Sir Edric Montague Bastyan, KCMG, KCVO, KBE, CB

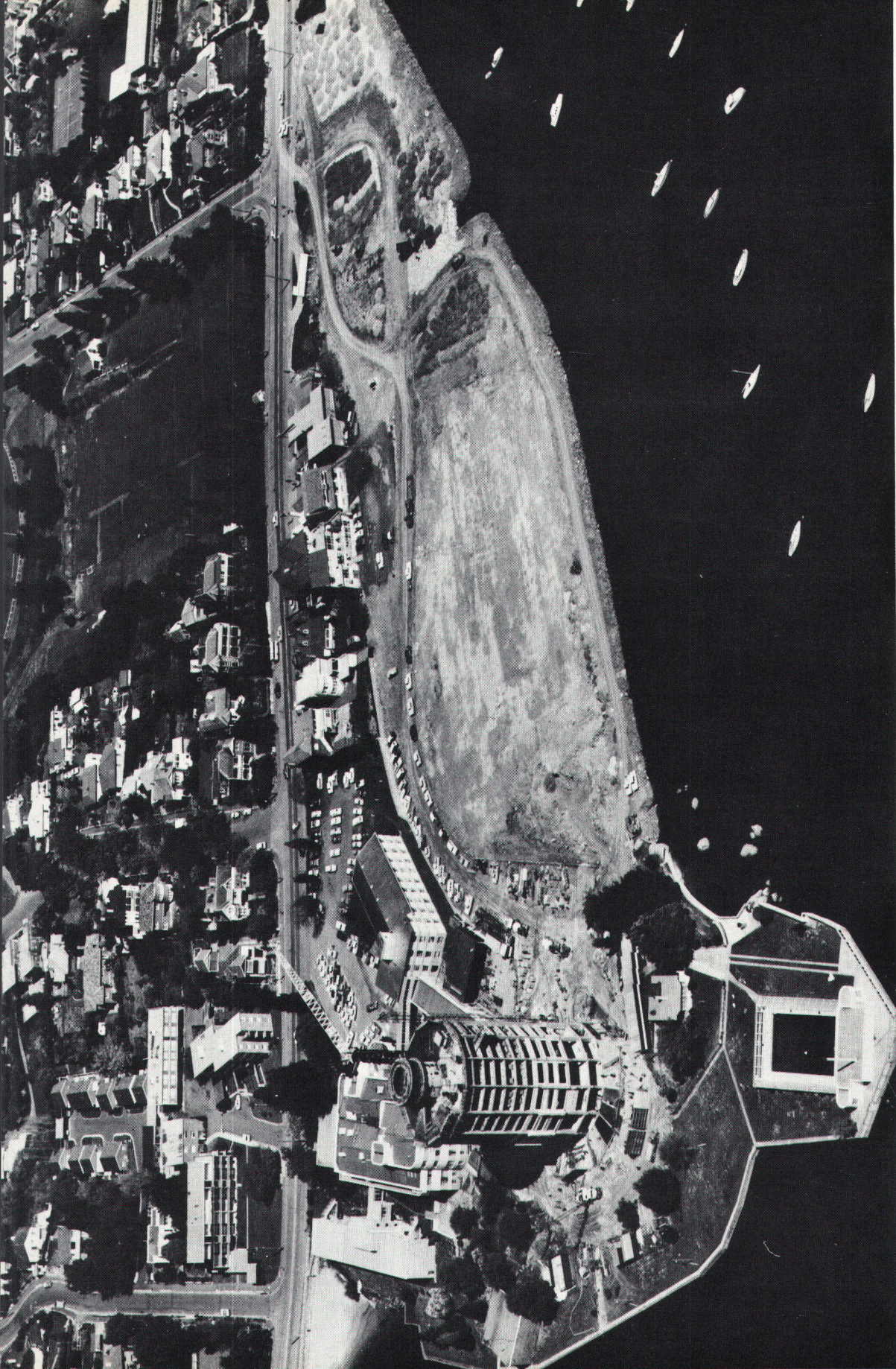
Born in England on 5 April 1903, married Victoria Eugenie Helen Batt 1944. Entered Sandhurst Royal Military College in 1921 at the age of 18. Graduated in 1923 with the rank of 2nd Lieutenant. Served with the Sherwood Foresters, 1923; West Yorkshire Regiment, 1935; Royal Irish Fusiliers, 1937; and the 53rd Welsh Infantry Division (TA) and Mid West District (Commander) 1952-1955. He saw active service in Palestine, 1938-1939; with the Eighth Army in Africa and Italy, 1939-1943; and in south-east Asia, 1944-1945. Post war service included a period as Major-General-in-Charge Administration, British Army of the Rhine, 1946-1948; Chief of Staff, Eastern Command, 1949-1950; Vice-Adjutant General War Office, 1955-1957; and until his retirement Commander, British Forces, Hong Kong, 1957-1960.

Sir Edric served as Governor of South Australia, 1961 to 1968, before taking office as Governor of Tasmania on 2 December 1968.

Honours

Another function of the Governor is the investing of all honours awarded to Tasmanians in the Queen's Birthday and New Year Honours Lists, except for knighthoods which are normally dubbed by the Governor-General in Canberra.

The following table lists Tasmanians who received honours in the 1971 lists.



West Point Casino and environs, October 1971

(Vern Reid)



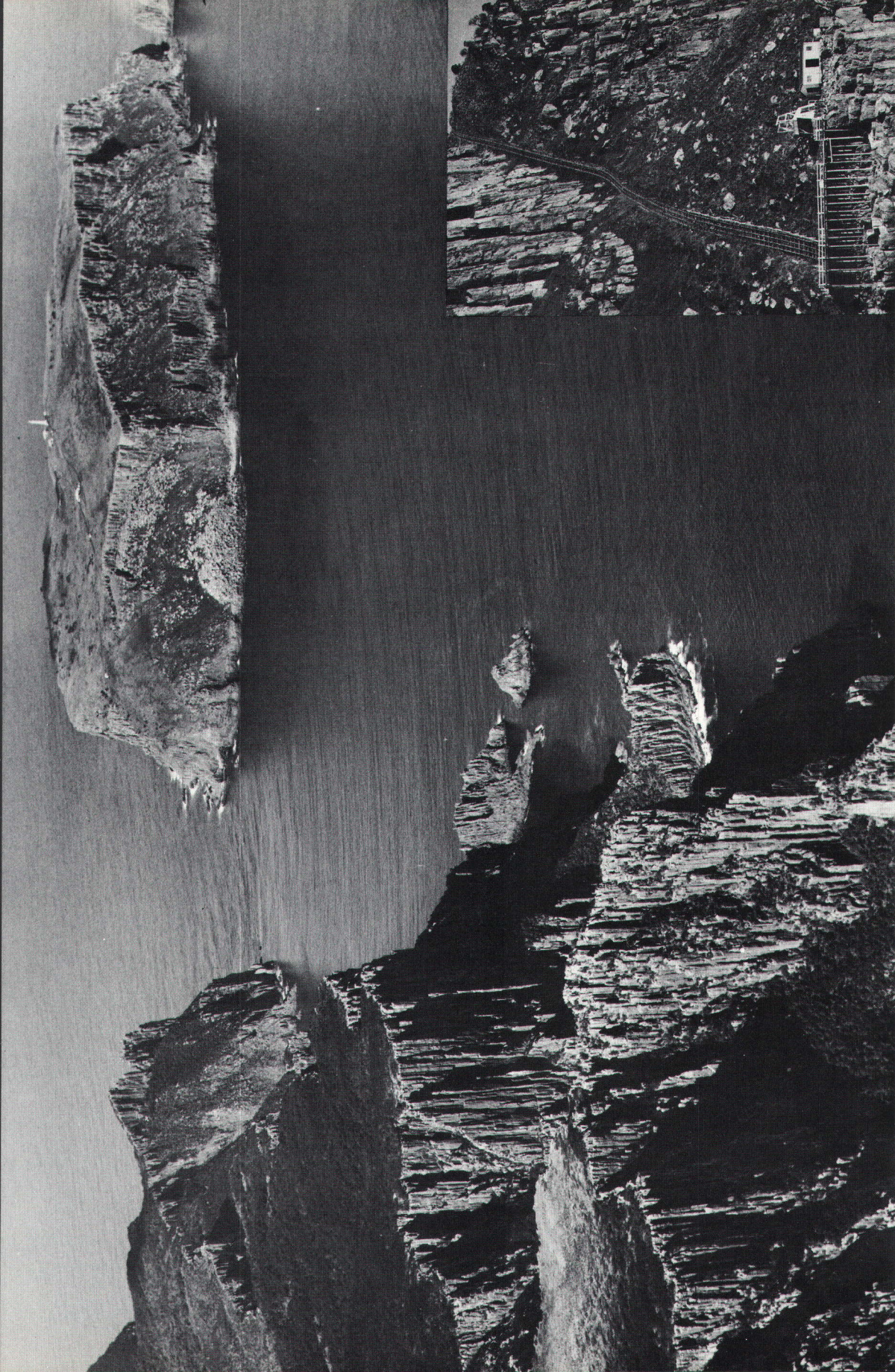
Devonport, with Mersey Bluff in the right foreground

(The Examiner)

Yellow Wattlebird

(David Milledge)





Cape Pillar and Tasman Island (Vern Reid). Inset: Tasman Island lighthouse railway



Cape Barren geese and chicks, Maria Island

(The Mercury)



Forty-spotted Pardalote

(David Milledge)

Tasmanians Receiving Queen's Honours, 1971

Honour	Recipient
Knight Bachelor	Sir Peter Lloyd Sir Alfred White
Companion of the Most Distinguished Order of Saint Michael and Saint George (Civil Division)	Mr Robert Charles Sharp
Commander of the Most Excellent Order of the British Empire (Civil Division)	Mr Geoffrey Bayard Gibson Edgell
Officer of the Most Excellent Order of the British Empire (Civil Division)	The Honourable Lloyd Horton Carins Mr Walter Loney Mr William Nicolle Oats Mr Russell George Piggott Mr Robert Henry Llewelyn Roberts Mr William Thomson Young
Member of the Most Excellent Order of the British Empire (Civil Division)	Mr Thomas Edward Doe Mrs Elizabeth Gladys Johnson Mr Gilbert Barry Leitch Sister Agnes Clara MacKenzie Mrs Evelyn Beatrice Propsting Mr Allen William Purkiss Mr Henry Edward Sulzberger
British Empire Medal	Mr Thomas Eaton
Queen's Police Medal for Distinguished Service	Superintendent Gordon Carl Hamilton Higgs Mr Henry Thomas Reid Superintendent Leonard Herbert Walter Rothwell Policewoman Sergeant Vera Margaret Webberley
Imperial Service Medal	Mr Ralph Lancaster Mr William Morgan Miss Annie Veronica O'Brien Mr Russell Peters Mr Jack Henry Robertson Miss Phyllis Meg Forsyth Mr Cyril Donnithorn Lumley Mr William Harris Stewart Mr Edwin Gordon Shelton Mr Victor Tasman Young

The Administrator

In the Letters Patent of 1900 (as amended in 1934), provision was made for a Lieutenant-Governor to administer the Government in the event of the Governor's death, incapacity, removal or departure from the State. Should there be no Lieutenant-Governor then appointed or should he be unable to act, the duties of the Governor were to be discharged by the Administrator. Attached to the Letters Patent was a Dormant Commission authorising the Chief Justice to act as Administrator 'in the event of the death, incapacity or absence of the Governor and the Lieutenant-Governor, if any'.

Lieutenant-Governors have often acted in place of the Governor but since 1943 it has been customary for the Chief Justice to act as Administrator in accordance with the provisions of the Dormant Commission which further nominates the next Senior Judge to act in the absence of the Chief Justice. (The last Lieutenant-Governor appointed was Sir John Evans, 1937-1943.)

The present Chief Justice is Sir Stanley Burbury, KBE, who has already acted as Administrator in the intervals between governorships and on other occasions.

Succession of Governors

The next table shows the succession of governors from the time of Lieutenant Bowen's settlement in 1803. For the first 40 years, all appointed were officers of the navy, marines, or army, Sir John Eardley-Wilmot being the first civilian (in 1843). The title 'governor' was first used by Sir H. E. Fox Young, under whose administration the colony graduated to self-government.

The terms of office fall into four eras: (i) the governor directly responsible to N.S.W.; (ii) governor independent of N.S.W.; (iii) colonial self-government; and (iv) post-federation.

Succession of Governors, Acting Governors and Administrators from 1803

Name	Designation	Period
(i) 1803-1825		
Lieut John Bowen	Commandant	11. 9.03 - 16. 2.04
Colonel David Collins, R.M.	Lieutenant-Governor	16. 2.04 - 24. 3.10
Lieut Edward Lord, R.M.	Commandant	24. 3.10 - 8. 7.10
Captain J. Murray, 73rd Regt	Commandant	8. 7.10 - 20. 2.12
Major A. Geils, 73rd Regt (a)	Commandant	20. 2.12 - 4. 2.13
Colonel Thomas Davey, R.M.	Lieutenant-Governor	4. 2.13 - 9. 4.17
Colonel William Sorell	Lieutenant-Governor	9. 4.17 - 14. 5.24
Colonel George Arthur (b)	Lieutenant-Governor	14. 5.24 - 3.12.25
(ii) 1825-1855		
Colonel George Arthur (b)	Lieutenant-Governor	6.12.25 - 29.10.36
Lt-Col K. Snodgrass	Administrator	29.10.36 - 5. 1.37
Sir J. Franklin, KCH, R.N.	Lieutenant-Governor	5. 1.37 - 21. 8.43
Sir J. E. Eardley-Wilmot, Bart	Lieutenant-Governor	21. 8.43 - 13.10.46
C. J. La Trobe, Esq.	Administrator	13.10.46 - 25. 1.47
Sir W. T. Denison	Lieutenant-Governor	25. 1.47 - 8. 1.55
(iii) 1855-1900		
Sir H. E. Fox Young	Governor	8. 1.55 - 10.12.61
Colonel Thomas Gore Browne, CB	Governor	10.12.61 - 30.12.68
Lt-Col W. C. Trevor, CB	Administrator	30.12.68 - 15. 1.69
Charles Du Cane, Esq.	Governor	15. 1.69 - 28.11.74
Hon. Sir Francis Smith, CJ	Administrator	28.11.74 - 13. 1.75
F. A. Weld, Esq.	Governor	13. 1.75 - 5. 4.80
Hon. Sir Francis Smith, CJ	Administrator	5. 4.80 - 21.10.80
Lt-General Sir J. H. Lefroy, KCMG, CB	Administrator	21.10.80 - 7.12.81
Sir G. C. Strahan, RA, KCMG	Governor	7.12.81 - 28.10.86
Hon. W. R. Giblin, Esq. SJ	Administrator	28.10.86 - 18.11.86
Hon. Sir W. L. Dobson, CJ	Administrator	18.11.86 - 11. 3.87
Sir R. G. C. Hamilton, KCB	Governor	11. 3.87 - 30.11.92
Hon. Sir W. L. Dobson, CJ	Administrator	30.11.92 - 8. 8.93
Rt Hon. J. W. Joseph, Viscount Gorman- ton, KCMG	Governor	8. 8.93 - 14. 8.00

Succession of Governors, Acting Governors and Administrators—*continued*

Name	Designation	Period
(iv) 1900—		
Sir John Dodds, KCMG	Administrator	14. 8.00 - 8.11.01
Sir A. E. Havelock, GCSI, GCME, GCIE	Governor	8.11.01 - 16. 4.04
Sir John Dodds, KCMG	Lieutenant-Governor	16. 4.04 - 28.10.04
Sir G. Strickland, KCMG	Governor	28.10.04 - 20. 5.09
Sir John Dodds, KCMG	Lieutenant-Governor	20. 5.09 - 29. 9.09
Sir Harry Barron, KCMG, CVO ..	Governor	29. 9.09 - 8. 3.13
Sir John Dodds, KCMG	Lieutenant-Governor	8. 3.13 - 4. 6.13
Sir William Ellison-Macartney, KCMG ..	Governor	4. 6.13 - 31. 3.17
Sir Herbert Nicholls	Administrator	31. 3.17 - 6. 7.17
Sir F. A. Newdigate Newdegate, KCMG	Governor	6. 7.17 - 9. 2.20
Sir Herbert Nicholls	Administrator	9. 2.20 - 16. 4.20
Sir W. L. Allardyce, KCMG	Governor	16. 4.20 - 26. 1.22
Sir Herbert Nicholls	Administrator	26. 1.22 - 30.11.23
Hon. N. K. Ewing, Esq.	Administrator	30.11.23 - 13. 6.24
Sir Herbert Nicholls	Administrator	13. 6.24 - 23.12.24
Sir James O'Grady, KCMG	Governor	23.12.24 - 23.12.30
Sir Herbert Nicholls, KCMG	Lieutenant-Governor	23.12.30 - 4. 8.33
Sir Ernest Clark, GCMG, KCB, CBE ..	Governor	4. 8.33 - 4. 8.45
Sir John Morris	Administrator	4. 8.45 - 24.12.45
Admiral Sir Hugh Binney, KCB, KCMG, DSO	Governor	24.12.45 - 8. 5.51
Sir John Morris, KCMG	Administrator	8. 5.51 - 22. 8.51
Rt Hon. Sir Ronald Cross, Bart, KCMG, KCVO	Governor	22. 8.51 - 4. 6.58
Hon. Sir Stanley Burbury, KBE	Administrator	4. 6.58 - 21.10.59
Rt Hon. the Lord Rowallan, KT, KBE, MC	Governor	21.10.59 - 25. 3.63
Hon. Sir Stanley Burbury, KBE	Administrator	25. 3.63 - 24. 9.63
Lt-General Sir Charles Gairdner, KCMG, KCVO, KBE, CB	Governor	24. 9.63 - 11. 7.68
Hon. Sir Stanley Burbury, KBE	Administrator	11. 7.68 - 2.12.68
Lt-General Sir Edric Bastyan, KCMG, KCVO, KBE, CB	Governor	2.12.68 -

- (a) Originally the Launceston settlement had its own officials appointed from N.S.W. Lieutenant-Governor W. Paterson was followed, as Commandant, by Captain J. Brabyn and Major G. A. Gordon. The next, Captain J. Ritchie, took office on 1 July 1812 subordinate to Major A. Geils.
- (b) On 3 December 1825, Lt-General Sir Ralph Darling displayed in Hobart two commissions, one as Governor of N.S.W. and one as Governor of Van Diemen's Land. This was the device for separating Van Diemen's Land from N.S.W. Colonel George Arthur was sworn in again as Lieutenant-Governor on 6 December 1825.

The Cabinet and Executive Government

General

In Tasmania, as in the other States and the Commonwealth, executive government is based on the system which was evolved in Britain in the 18th century, and which is generally known as 'Cabinet', or 'responsible' government. Its essence is that the head of the State (in Tasmania, the Governor representing Her Majesty the Queen) should perform governmental acts on the advice of his Ministers; that he should choose his principal Ministers of State from members of Parliament belonging to the party, or coalition of parties, commanding a majority in the popular House; that the Ministry so

chosen should be collectively responsible to that House for the government of the country; and that the Ministry should resign if it ceases to command a majority there.

The Cabinet system operates chiefly by means of constitutional conventions, customs or understandings, and through institutions that do not form part of the legal structure of the government at all. In law, still, the executive power of the State is exercised by the Governor who is advised by the Executive Council which he himself has appointed and which meets for formal purposes, to be later explained. The whole policy of a Ministry is, in practice, determined by the Ministers of the Crown, meeting without the Governor under the chairmanship of the Premier, and this body is known as the Cabinet.

The Cabinet

This body does not form part of the legal mechanism of government and its meetings are private and deliberative. Only the Ministers of the day are present, no records of the meetings are made public, and the decisions taken have, in themselves, no legal effect. As Ministers are the leaders of the party commanding a majority in the House of Assembly, the Cabinet substantially controls not only the general legislative programme of Parliament, but the whole course of Parliamentary proceedings. In effect, though not in form, the Cabinet, by reason of the fact that all Ministers are members of the Executive Council, is also the dominant element in the executive government of the State. Even in summoning, proroguing or dissolving Parliament, the Governor is usually guided by the advice tendered him by the Cabinet, through the Premier, though legally the discretion is vested in the Governor.

In Tasmania, the present Cabinet consists of the nine Ministers of the Crown, including the Premier, most of whom hold more than one portfolio.

The Executive Council

This body is usually presided over by the Governor, the members thereof holding office during his pleasure. All Ministers of the Crown must be members of the Executive Council. Ministers actually remain members of the Executive Council on leaving office, but are not summoned to its meetings, for it is an essential feature of the Cabinet system that attendance should be limited to the Ministers of the day. The Chief Justice and Judges of the Supreme Court are also members of the Executive Council, but they too are not summoned to its meetings for the same reason. The meetings of the Executive Council are formal and official in character, and a record of proceedings is kept by the Clerk (who is the permanent head of the Premier's and Chief Secretary's Department). At Executive Council meetings, the decisions of Cabinet are (where necessary) given legal form, appointments made, resignations accepted, proclamations issued, and regulations and the like approved. The quorum required is three, comprising the Governor and at least two Ministers.

The Appointment of Ministers

Legally, Ministers hold office during the pleasure of the Governor. In practice, however, the discretion of the head of State in the choice of Ministers is limited by the conventions on which the Cabinet system rests. When a Ministry resigns, the Governor's custom is to send for the leader of the party which commands a majority in the lower House, and to commission him, as Premier, to 'form a Ministry'—that is, to nominate other persons to be appointed as Ministers of the Crown and to serve as his colleagues in the Cabinet.

The *Constitution Act* 1854 defined the Parliament of Tasmania as 'the Governor and the Legislative Council and House of Assembly together'. Although no legal requirements enforce it, the selection of all Ministers of the

Crown from Parliament stems from the British tradition and sharply contrasts with the American system which requires its Ministers *not* to be members of Congress.

The Governor's power to revoke the appointment of a Minister of the Crown was exercised in 1959, the circumstances being that a Minister had refused to resign from Cabinet; in the absence of the Governor, and on the advice of the Premier, the Administrator terminated the Minister's appointment.

Premiers

The following is a list of the Premiers of Tasmania from 1856 (the year in which the first elected Parliament sat):

Premiers from 1856			
Name of Premier	Date of Assumption of Office	Date of Retirement from Office	Duration of Office (Months)
1856-1900			
W. T. N. Champ	1.11.56	26. 2.57	4
T. G. Gregson	26. 2.57	25. 4.57	2
W. P. Weston	25. 4.57	12. 5.57	1
F. Smith	12. 5.57	1.11.60	42
W. P. Weston	1.11.60	2. 8.61	9
T. D. Chapman	2. 8.61	20. 1.63	18
J. Whyte	20. 1.63	24.11.66	46
Sir Richard Dry	24.11.66	4. 8.69	32
J. M. Wilson	4. 8.69	4.11.72	39
F. M. Innes	4.11.72	4. 8.73	9
A. Kennerley	4. 8.73	20. 7.76	36
T. Reibey	20. 7.76	9. 8.77	13
P. O. Fysh	9. 8.77	5. 3.78	7
W. R. Giblin	5. 3.78	20.12.78	9
W. L. Crowther	20.12.78	30.10.79	10
W. R. Giblin	30.10.79	15. 8.84	58
Adye Douglas	15. 8.84	8. 3.86	19
J. W. Agnew	8. 3.86	29. 3.87	13
P. O. Fysh	29. 3.87	17. 8.92	65
H. Dobson	17. 8.92	14. 4.94	20
Sir Edward Braddon	14. 4.94	12.10.99	66
1900-			
Sir N. E. Lewis	12.10.99	9. 4.03	42
W. B. Propsting	9. 4.03	11. 7.04	15
J. W. Evans	11. 7.04	19. 6.09	59
Sir N. E. Lewis	19. 6.09	20.10.09	4
J. Earle (a)	20.10.09	27.10.09	..
Sir N. E. Lewis	27.10.09	14. 6.12	32
A. E. Solomon	14. 6.12	6. 4.14	22
J. Earle (a)	6. 4.14	15. 4.16	24
Sir Walter Lee	15. 4.16	12. 8.22	76
J. B. Hayes	12. 8.22	14. 8.23	12
Sir Walter Lee	14. 8.23	25.10.23	2
J. A. Lyons (a)	25.10.23	15. 6.28	56
J. C. McPhee	15. 6.28	15. 3.34	69
Sir Walter Lee	15. 3.34	22. 6.34	3
A. G. Ogilvie (a)	22. 6.34	10. 6.39	60
E. Dwyer Gray	11. 6.39	18.12.39	6
R. Cosgrove	18.12.39	18.12.47	96
E. Brooker	18.12.47	25. 2.48	2
R. Cosgrove	25. 2.48	26. 8.58	126
E. E. Reece	26. 8.58	26. 5.69	129
W. A. Bethune	26. 5.69		

(a) Tasmania had an unbroken succession of Labor Premiers, starting with the Ogilvie Ministry (1934), until the resignation of the Reece government (following electoral defeat) on 26 May 1969; earlier Labor Ministries were led by J. Earle (first in 1909) and by J. A. Lyons.

Present Ministry

After the elections held on 10 May 1969, the Ministry led by the Hon. W. A. Bethune, was announced as follows:

Ministry (since May 1969)

Name	House	Responsibility (a)
The Hon. W. A. Bethune ..	Assembly	Premier, Treasurer, Hydro-Electric Commission
The Hon. K. O. Lyons ..	Assembly	Deputy Premier, Chief Secretary, Tourism
The Hon. R. Mather ..	Assembly	Education
The Hon. W. G. Barker ..	Assembly	Lands and Works, Local Government
The Hon. E. W. Beattie ..	Assembly	Agriculture, Forestry
The Hon. E. M. Bingham ..	Assembly	Attorney-General, Police, Licensing
The Hon. D. F. Clark ..	Assembly	Housing, Industrial Development, Sea Fisheries
The Hon. N. D. Abbott ..	Assembly	Health, Road Safety
The Hon. L. H. Bessell ..	Assembly	Transport, Racing and Gaming, Mines

(a) See section 'Administration' later in chapter for fuller statement of responsibility.

Relations of Two Houses

Status of Legislative Council

A vexed question for many years was the exact status of the Legislative Council in relation to the House of Assembly from which the Ministry of the day was predominantly chosen. The 1854 Constitution Act had defined Parliament as 'the Governor and the Legislative Council and House of Assembly together' and obviously the approval of all three was necessary for laws to become valid; on the other hand, there was no adequate provision for resolving situations in which the Legislative Council rejected bills or amended bills in ways unacceptable to the House of Assembly. The lower house was elected on a wider franchise, and could legitimately claim to be the more accurate instrument of public opinion to the extent that it was not a perpetual body like the Legislative Council, as its members were all elected at the one time. (Only in 1968 was legislation passed to introduce adult franchise for Legislative Council elections.) The power of the Legislative Council to reject and amend was most resented in relation to money bills, since these vitally affected the administration of public affairs by the Ministry of the day.

The Conflict of 1924 and 1925

The 1924-25 Appropriation Bill was amended by the Legislative Council, involving a reduction of \$37,000. The Premier (J. A. Lyons) decided to challenge the right of the upper house to amend money bills; after a two-house conference had failed to reach agreement, the House of Assembly voted 17 to ten, directing the Speaker to seek Royal Assent for the bill 'in the form it passed the House of Assembly'.

The Administrator gave assent to the bill following consultation with the Secretary of State in London and Tasmanian Crown law officials and it went on to the statute book.

By 1925, a new Governor (Sir James O'Grady) had taken up office but he followed the precedent set by the Administrator, giving assent to 'one-house' bills.

A joint committee was established in 1925 to formulate constitutional changes that would resolve the situation and define the relations of the two houses in the passing of money bills. This resulted in the passage of the *Constitutional Amendment Act 1926*.

The following current principles are found in the Act: (i) the Legislative Council retains the right to reject any bill, including a money bill; (ii) the Council is specifically prevented from amending bills to raise revenue for the ordinary annual services of the Government and bills imposing land and income tax; (iii) it can suggest to the House of Assembly that amendments be made but the adoption or rejection of such amendments is at the discretion of the Assembly; and (iv) the operation of such bills is restricted to a period of one year. Apart from the above specific exceptions, the Council retains the right to amend money bills, e.g. those dealing with loan funds or probate. The House of Assembly is given the sole right to initiate bills for the raising of revenue and the imposition of taxes. Finally, the powers of the two houses are declared equal in all matters except for these specific exceptions.

Deadlocks

The Legislative Council has the tradition of being a non-party house and, in actual fact, the majority of its members are elected as independents without the official endorsement of any party, members who have received party endorsement (from the Labor Party) are heavily outnumbered. The leader for the Government in the Legislative Council cannot rely upon a vote taken on party lines to ensure the passage of any government bill. It is the ability to command a majority in the House of Assembly which gives a party the right to form the government of the day and which ensures the passage of government legislation through the lower house; no such certainty exists in the passage of bills through the upper house and accordingly the Legislative Council is in a position to exercise considerable influence on the form in which bills are finally passed through both houses.

As from July 1964, the Liberal Party reversed its policy of non-endorsement of candidates for the Legislative Council and decided to endorse candidates in certain circumstances. It gave endorsement to only one candidate in the period 1964-1970, but an independent won the seat.

Consultation Machinery

When a position is reached in which one house refuses to accept the amendments or legislation of the other, provision exists under the Standing Orders for joint consultation by the calling of a 'Free Conference' at which each house is represented by 'managers'. (It is usual for each house to be represented by four managers.) The free conference endeavours to find a compromise acceptable to both houses.

Another form of consultation between the two houses is the appointment of a joint select committee which is set terms of reference and which is primarily concerned with fact-finding. The passage of a bill may be temporarily delayed while a joint select committee makes a specific investigation; this machinery provides members with the information necessary to cast an informed vote.

Parties

In the period 1909-1971, the major parties have been the Labor Party and the Liberal Party (which replaced the Nationalist Party in 1948). In the early 1920s, a Country Party appeared with five members in the House of Assembly but soon went out of existence. At the 1964 Assembly elections,

a number of Country Party candidates stood but none was successful. In October 1966 K. O. Lyons, one of the House of Assembly members for Braddon, resigned from the Liberal Party and formed the Australian Centre Party, an organisation affiliated with the Australian Country Party.

Dissolution of Parliament

The Governor may dissolve the House of Assembly whenever he considers it desirable but he has no power to dissolve the Legislative Council. In effect then, the Legislative Council is a perpetual body except that approximately one-sixth of its seats falls vacant annually. As there is no provision for a double dissolution the Legislative Council, by rejection of a supply bill, can force the House of Assembly to seek a dissolution without itself needing to face the electorate. This last occurred in 1948.

In practice, the Governor considers dissolving the House of Assembly only when requested to do so by his Ministers. In recent years the House of Assembly has been dissolved twice, in 1950 and again in 1956.

Sessions of Parliament

Parliament is required to sit every year and, having risen, must sit again before twelve months have elapsed. When the House of Assembly is dissolved and a general election held, the Governor is required to call Parliament together within ninety days of the dissolution, subject to a discretionary extension of a further thirty days.

Elections for the House of Assembly

Tasmanian System

Elections for the House of Assembly are conducted under a system which can be classified as proportional representation by the single transferable vote.

The essential features of the system are as follows:

- (i) For an elector to cast a valid vote, he must express at least three preferences.
- (ii) Names on the voting papers are arranged in distinct groups to facilitate recognition of allegiance to parties (but names of parties are not specified).
- (iii) To secure election, candidates must secure a quota in accordance with the Droop formula (i.e. the total first-preference votes in the constituency divided by eight, plus one vote).
- (iv) Should a candidate secure an exact quota on first preferences, his voting papers are set aside as finally dealt with.
- (v) If the first successful candidate secures a surplus above the quota, then all his voting papers are re-examined to determine which candidates should secure the second preferences.
- (vi) The second preferences are first adjusted by multiplying them by a fraction called the transfer value. The transfer value is calculated by dividing the successful candidate's surplus first-preference votes by his total first preferences. The second-preference votes, adjusted in this way, are now transferred to other candidates.

- (vii) When repetition of the above process results in a position where no further candidates can reach a quota, the candidate who is lowest on the poll is excluded and the preferences shown on his voting papers transferred to the remaining candidates.

The above processes are repeated until seven candidates have been elected. As might be expected, the counting of votes, calculation of transfer values and the transferring of votes are time-consuming operations and a week may elapse before the declaration of a poll.

Tasmanian Adoption

In 1907, an Electoral Act provided that all members of the House of Assembly were to be elected by proportional representation, the State being divided into five constituencies each of which was to be represented by six members. The first election in accordance with this Act was held in 1909.

The fourth schedule to the 1907 Act dealing with quotas, transfer of votes, exclusion of candidates, etc. is still the blue-print for counting votes today; however, as from the 1959 elections, the number of members for each constituency was increased from six to seven, a measure designed to avoid Parliamentary deadlocks.

Advantages

The major advantage claimed for the system is that the composition of the House of Assembly tends to faithfully reflect the wishes of the electors viewed on a State basis, and that a party with a minority of first preferences is most unlikely to obtain a majority of seats, as sometimes occurs in systems with single-member constituencies. By way of example, South Australia, using single-member electorates has sometimes been governed by parties receiving a minority of votes but a majority of seats; other Australian States have had similar experience.

Leaving aside the matter of independents and minority parties, and assuming that only candidates from the two major parties are elected, then the present pattern is for each constituency to elect four candidates from one of the major parties and three from the other. It follows, therefore, that the opposition is always adequately represented in the House of Assembly and supporters of the opposition party always have representatives for their constituency.

Effectiveness of System

Since voting for the House of Assembly requires a voter to make at least three choices in order of preference, any complete investigation of the effectiveness of the system requires a study of all preference votes. However, an approximate measure of effectiveness can be obtained by treating the State as a single electorate and finding the total first-preference votes obtained by each party; from these totals it is possible to calculate, by simple proportion, the theoretical share of seats to which each party is entitled. In the table that follows, this measure of effectiveness has been calculated for all House of Assembly elections in the period 1931-1969 inclusive. It will be seen that although the relationship between seats actually won and the calculated proportionate share is fairly close in most elections for the major parties, a change in the number of members elected for each electorate after the 1959 election has partially unbalanced this relationship. At the 1969 elections, the contending parties were Australian Centre Party, Democratic Labor Party, Labor Party and Liberal Party, while a number of candidates stood as independents.

**Representation of Parties for the Whole State, 1931-1969
House of Assembly**

Election Year	Labor		Liberal (from 1948) or Nationalist		Other (b)	
	Proportionate Share (a)	Seats Won	Proportionate Share (a)	Seats Won	Proportionate Share (a)	Seats Won
1931	10.47	10	16.92	19	2.61	1
1934	13.74	14	14.01	13	2.25	3
1937	17.61	18	11.64	12	0.75	..
1941	18.78	20	10.98	10	0.24	..
1946	15.29	16	10.27	12	4.44	2
1948	14.82	15	11.35	12	3.83	3
1950	14.59	15	14.27	14	1.14	1
1955	15.79	15	13.60	15	0.61	..
1956	15.08	15	13.08	15	1.84	..
1959 (c)	15.58	17	14.37	16	5.05	2
1964	17.97	19	13.47	16	3.56	..
1969	15.91	17	14.68	17	4.51	1

(a) State treated as single electorate and proportionate share of seats calculated on basis of first preference votes cast for parties.

(b) Independents and minority parties.

(c) 35 members elected, as from 1959.

Use of the System

Many regard the system of election for the House of Assembly as being a phenomenon peculiar to Tasmania. This is by no means so, since the following countries either use or have used a similar system of election: Republic of Ireland (both Houses), South Africa (Senate), Malta (both Houses), Gibraltar (Legislative Council), Canada (for some provincial electorates in Alberta and Manitoba) and Australia itself, in the election of the Federal Senate. If the State has any claim to being unique in the field of electoral reform, it must be based on the fact that Tasmania was the first country in the world to introduce proportional representation by the single transferable vote.

Criticism

Following the 10 May 1969 election considerable criticism was made of the Hare-Clark preferential voting system. Critics claim that single-member electorates would have more closely reflected the feelings of the electorate and would have ensured more equitable representation for all areas, rather than a concentration of members in a particular part of an electorate as is possible due to the large size of Tasmanian electorates. Of the 35 members in the House of Assembly, 16 reside in the Hobart metropolitan area, 13 in other urban centres and only six in the rural areas of the State.

The population distribution in Tasmania is unlike any other Australian State as: (i) the metropolitan area is not the dominant population concentration; and (ii) the rural area of the State has a higher proportion of the population than in any other State. In 1966 only 31.5 per cent of the population was found in the metropolitan area; 38.1 per cent in other urban areas; and 29.5 per cent in the rural areas.

It is evident that when these figures are compared with the places of residence of House of Assembly members that the rural areas appear to be under-represented and the urban areas over-represented.

The position is reversed for the Legislative Council single member seats where 'rural' and 'special' electorates account for nine of the nineteen seats.

Resolution of Assembly Deadlocks

House of 30 Members

One of the virtues claimed for the Hare-Clark system is the adequate representation given to minorities. In a small House of 30 members, this virtue tended to be too evident and led to situations where the government of the day did not have the necessary majority to carry all its legislation with confidence.

The first remedy employed was the *Constitution Amendment Act 1954* which provided that, in the event of a 15-all draw between the two major parties in an election, an Electoral Commission would be established. This body's function would be to decide, on the basis of primary votes cast for each party, which were the majority and minority parties. On the meeting of Parliament, the minority party would then have the right to nominate one of its members to the office of Speaker. If the minority party refused to exercise this right, then the majority party might proceed to appoint one of its own members and it would receive an additional member in replacement, elected from the Speaker's constituency.

The 1954 Act provided machinery for overcoming deadlocks but still did not have much impact on the major problem—that of providing the government of the day with an effective working majority.

House of 35 Members

In 1958, a further constitutional amendment was made in which the number of members to be elected for each constituency was increased from six to seven, thus enlarging the House of Assembly from 30 to 35 members. At the first elections held under the provisions of this amendment (May 1959), the major parties secured 17 and 16 seats respectively, the remaining seats being won by independents. At the May elections of 1969, the major parties secured 17 seats each, the other going to the Australian Centre Party.

Life of House of Assembly

After the *Constitution Act 1936*, the House was elected for five-year terms. The 1954 Act provided that the term should be reduced to three years if the special deadlock provisions were invoked to appoint a Speaker, but the 1958 Act restored five-year terms irrespective of the outcome of the election. In 1969, the life of the House was reduced to three years by the newly-elected Bethune government, with the exception of the present Parliament which retains the five-year term.

Constituencies of House of Assembly

The five constituencies for the House of Assembly are identical with the five electoral divisions electing members to the Federal House of Representatives. The periodic alteration of electoral boundaries to accord with changes in population is carried out under a joint Commonwealth-State agreement, the most recent redistribution becoming effective in November 1968.

Alteration of Electoral Boundaries

The following table summarises the effect of the 1968 Electoral Commissioners' redistribution for Tasmania (the number of electorates remained unaltered). The map which follows the table, shows the extent of each electorate.

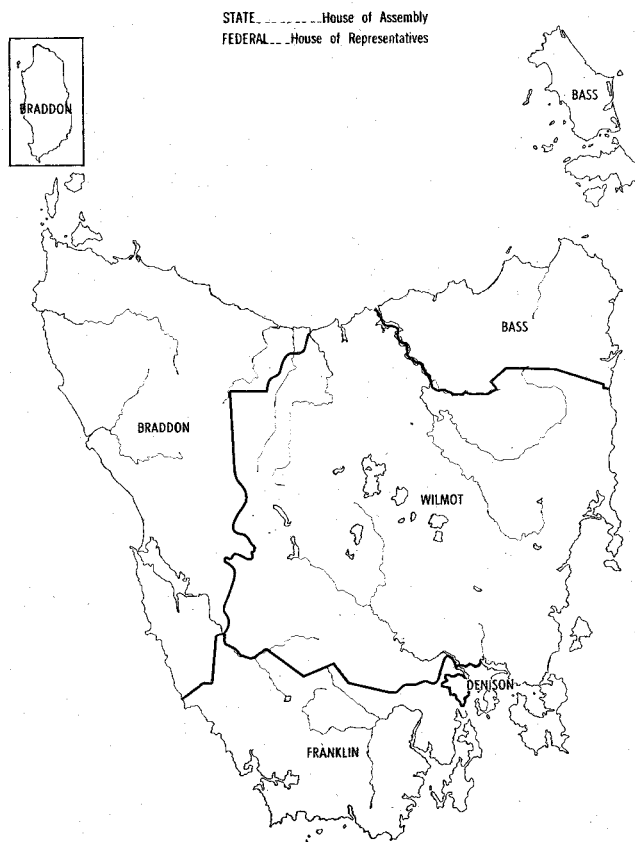
Enrolments by Electorate (a)

Electorate	Enrolments			
	Old Boundaries 31 May 1968	New Boundaries		
		31 May 1968 (b)	30 June 1969	30 June 1970
Bass	40,139	40,139	40,860	40,885
Braddon	41,803	41,803	44,021	44,259
Denison	35,353	42,917	44,900	45,945
Franklin	49,026	37,203	39,335	40,040
Wilmot	37,103	41,362	42,779	42,664
Total	203,424	203,424	211,895	213,793

(a) Electorate boundaries changed for the divisions of Denison, Wilmot and Franklin.

(b) Although boundary changes did not become effective until 25 November 1968 the enrolment figures at 31 May 1968 show the immediate effect of the changes.

ELECTORAL DIVISIONS



Elections for the Legislative Council

Annual Fractional Elections

For the purpose of electing members of the Legislative Council, the State is divided into nineteen single-member constituencies. Each member, when elected, holds office for six years and Council elections are held every year to elect three members; every sixth year four members are elected.

Should any seat become vacant otherwise than by effluxion of time, the person elected to fill the vacancy holds office only until the expiration of the period for which the vacating member was elected.

Preferential Voting

Candidates appear on the voting paper in alphabetical order and are not grouped to show party allegiance as in voting papers for the House of Assembly. If there are two candidates, the voter need only vote for one. If there are three or more candidates, the voter must indicate at least three preferences to record a valid vote.

If any candidate secures first-preference votes exceeding half the total first preferences, he is declared elected. If no candidate satisfies this condition, then the candidate with the fewest votes is excluded and the second preferences shown on his voting papers are transferred to other candidates, the transfer value of each such second preference being equal to one. If no candidate then has the required majority, the process of exclusion is repeated until such time as one candidate secures the majority.

The method of counting is identical with that used in elections for the Federal House of Representatives and is termed preferential. The full description is election by absolute majority through use of the alternative vote.

New Boundaries, Legislative Council Divisions

Late in 1967, the *Constitution Act 1934* was amended to change the boundaries of the Legislative Council Divisions, the new boundaries being used for the first time in 1969. The following table shows the number of electors in each division before and after redistribution.

Legislative Council: Effect of Changed Boundaries on Number of Electors in Each Division

Division (a)	Before Redistribution	After Redistribution		
	31 May 1968	30 Sept 1968	30 June 1969	30 June 1970(b)
Buckingham (H) ..	11,450	10,227	9,889	10,186
Cornwall (L) ..	6,556	9,499	9,219	9,837
Derwent (R) ..	13,370	6,078	6,029	6,814
Gordon (c) (S) ..	4,039	3,731	3,941	5,505
Hobart (c) (H) ..	4,565	10,091	9,919	13,104
Huon (R) ..	9,141	7,776	7,661	7,675
Launceston (c) (L) ..	2,826	8,998	9,401	11,462
Macquarie (R) ..	7,107	5,819	5,775	5,730
Meander (R) ..	5,639	7,151	7,091	7,854
Mersey (DU) ..	11,023	11,037	11,106	11,850
Monmouth (c) (R) ..	3,491	6,313	6,852	6,764
Newdegate (c) (H) ..	7,867	11,822	11,798	12,135
Pembroke (H) ..	17,214	13,347	13,457	15,720
Queenborough (H) ..	7,824	9,495	9,515	10,565
Russell (c) (R) ..	8,189	8,268	8,655	9,212
South Esk (R) ..	9,517	7,263	7,298	8,497
Tamar (R) ..	8,183	6,182	6,154	6,494
West Devon (BP) ..	9,249	9,438	9,493	11,229
Westmorland (L) ..	13,270	8,290	8,174	9,385
Total	160,520	160,825	161,427	180,018

(a) (H)=Hobart and suburban; (L)=Launceston and suburban; (BP)=Burnie and Penguin municipalities; (DU)=Parts of Devonport and Ulverstone municipalities; (R)=rural; (S)=special.

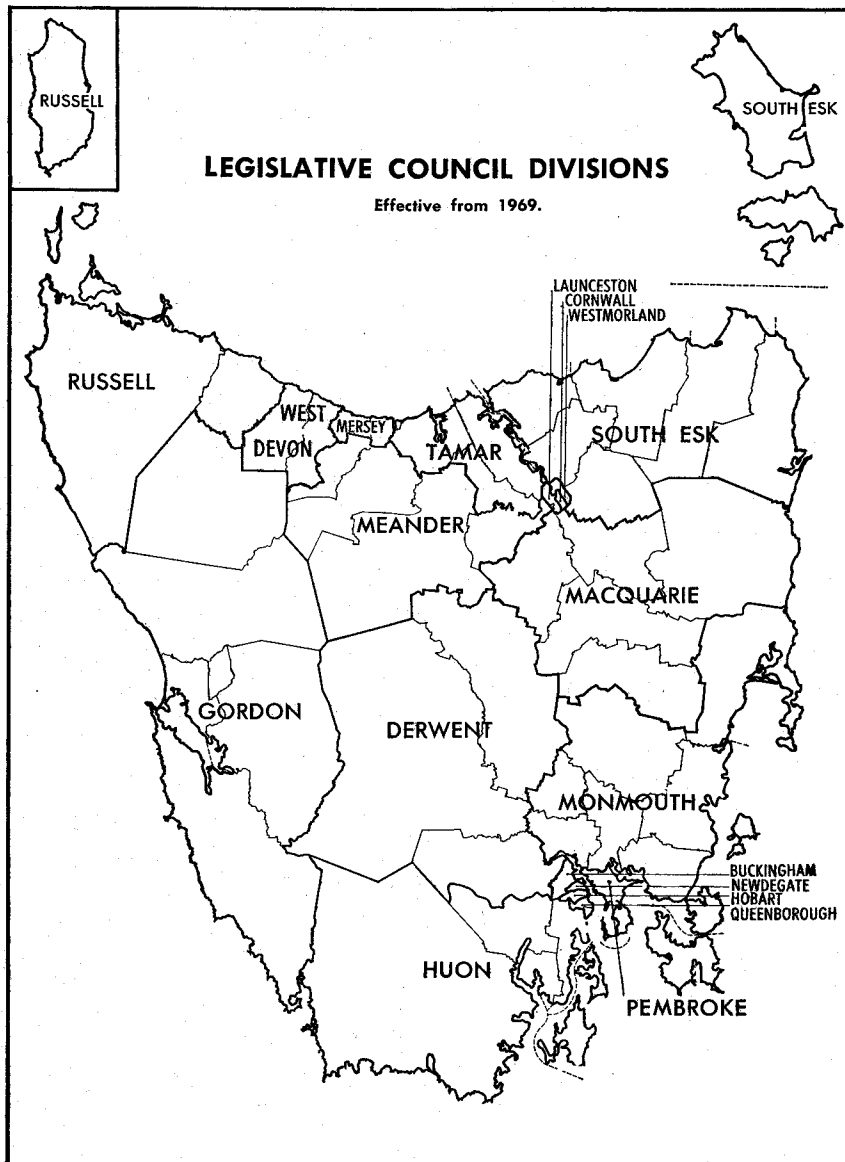
(b) Franchise widened 1 July 1969; figures not directly comparable.

(c) Election held since changes in boundaries and franchise.

The redistribution differentiated between the faster growing populations in urban electorates and the stationary or contracting populations in rural seats. Special provision was made for the isolated west coast seat of Gordon.

Although universal franchise replaced the former restricted franchise on 1 July 1969, the Electoral Department is progressively updating the roll concentrating on the three or four electorates to be contested each year.

The following map illustrates the current boundaries of the Legislative Council divisions.



Qualifications of Electors and Members

Qualifications of an Elector

An elector for both the House of Assembly and the Legislative Council is any person, aged at least twenty-one years, male or female, who has lived in the State six months continuously, who is a natural-born or naturalised subject of the Queen and whose name is on the electoral roll for any Assembly division. Voting has been compulsory since the *Electoral Act* 1928. The special qualifications for electors of the Legislative Council were abolished on 1 July 1969 following amendments to the *Constitution Act* 1934 and the *Electoral Act* 1907.

In contrast with elections for Federal Parliament, there is no provision in the Tasmanian Electoral Act for voting by members of the overseas armed forces under the age of twenty-one years.

Qualifications of Members

House of Assembly: To be eligible for election as a member of the House of Assembly, a candidate must comply with the following conditions:

He must either be an elector or be qualified to be an elector for the House of Assembly and resident in Tasmania for five years at any one time or resident for two years immediately preceding the election.

Legislative Council: A candidate for the Legislative Council must be an elector or have the qualifications of an elector for the Council; in addition he must meet the residential restrictions imposed on candidates for the House of Assembly.

Persons of unsound mind or in prison under any conviction are barred from voting at elections for either House or from being elected to either House. No person shall be capable of being a member of both Houses at the one time.

By-Elections

House of Assembly

In the case of a vacancy occurring in the House of Assembly, there is provision for the Chief Electoral Officer to publicly invite nominations from candidates who were unsuccessful at the last general election in the constituency which elected the vacating member. If one nomination only is received, then the Chief Electoral Officer declares the consenting candidate elected and notifies the Governor to this effect.

If more than one such nomination is received, the Chief Electoral Officer is required to examine the voting papers counted for the vacating member at the last general election. In the simple case—where the vacating member obtained a surplus above the quota—this can be confined to voting papers expressing first choices. In the more difficult case—where the vacating member did not obtain a quota on first choices—it is necessary to take into account not only original first-choice papers but also all voting papers representing votes transferred to the vacating member.

The vacating member's voting papers, as defined above, are examined and all his votes are transferred to the consenting candidates according to the preferences expressed thereon. Second preferences derived from first choice votes of the vacating member have a transfer value of one, but from votes he obtained by transfer, only the value at which he obtained them. For the purpose of the count, first-choice votes received by the consenting candidates at the general election are not relevant—the selection is based on preferences as revealed by the voting papers of the vacating member.

When the number of votes in favour of each consenting candidate has been ascertained, the final selection is by the method of the absolute majority through the alternative vote.

If no nominations are received from candidates unsuccessful at the last general election, then an election is held to fill the vacancy.

The most recent by-election for the House of Assembly was to replace a vacancy caused by the death of Mr J. L. Steer, the pioneer of daylight saving in Tasmania. Mr J. W. Henty filled the vacancy.

Legislative Council

In the case of a vacancy occurring in the Legislative Council, a writ is issued directing that an election be held to fill the vacancy. There is no provision for a re-count of voting papers of the vacating member as in by-elections for the House of Assembly.

A by-election to fill a Legislative Council vacancy last occurred in 1968 when Mr R. W. Shipp was elected to fill the vacancy created with the disqualification of Mr J. R. Orchard. Mr Orchard was disqualified as a private company in which he had a substantial shareholding held Crown contracts.

Members of Parliament

Legislative Council

The following shows members of the Legislative Council, the electoral division which they represent and the year in which each will retire from the Council.

Members of the Legislative Council

Electoral Division	Member's Name	Year for Retirement
Buckingham ..	Lowrie, The Hon. Kenneth Francis	1974
Cornwall ..	Foot, The Hon. Geoffrey James (a)	1972
Derwent ..	Dixon, The Hon. Joseph Henry	1973
Gordon ..	Broadby, The Hon. Albert James	1976
Hobart ..	Benjamin, The Hon. Phyllis Jean, MBE(b)	1976
Huon ..	Hodgman, The Hon. William Michael	1972
Launceston ..	Shipp, The Hon. Raymond William	1976
Macquarie ..	Shaw, The Hon. George Arthur	1974
Meander ..	Coates, The Hon. Jeffrey Allan	1977
Mersey ..	McFie, The Hon. Hector (c)	1972
Monmouth ..	Bisdce, The Hon. Louis Fenn	1975
Newdegate ..	Miller, The Hon. Brian Kirkwall (b)	1975
Pembroke ..	McKay, The Hon. Eric Charles	1977
Queenborough ..	Hodgman, The Hon. William Clark	1977
Russell ..	Fenton, The Hon. Charles Balfour Marcus (d)	1975
South Esk ..	Carins, The Hon. Lloyd Horton, O.B.E.	1974
Tamar ..	Hitchcock, The Hon. Daniel	1973
West Devon ..	Young, The Hon. William Thomson	1977
Westmorland ..	Gregory, The Hon. Oliver Harold	1973

(a) Leader for the Government in the Legislative Council.

(b) Endorsed by Australian Labor Party; balance of members are independents.

(c) President.

(d) Chairman of Committees.

House of Assembly

The following shows members of the House of Assembly elected on 10 May 1969 and their party allegiance:

Members of the House of Assembly

Electoral Division	Member's Name	Party Affiliation
Bass	Atkins, Alexander Charles Barnard, Michael Thomas Claude Barrenger, Timothy Alan Beattie, The Hon. Eric William Bushby, Maxwell Holmes (a) Foster, Allan John Henty, James Wilson	A.L.P. A.L.P. Liberal Liberal Liberal A.L.P. Liberal
Braddon	Barker, The Hon. Wilfrid George Breheny, John Gerald Chisholm, Geoffrey Donald Costello, Lloyd Edwin Albert Lyons, The Hon. Kevin Orchard (b) Reece, The Hon. Eric Elliott (c) Ward, Sydney Victor	Liberal Liberal A.L.P. A.L.P. Centre A.L.P. A.L.P.
Denison	Abbott, The Hon. Nigel Drury Austin, Kenneth Ernest Baker, Robert Wilfrid Batt, Neil Leonard Charles Bingham, The Hon. Eardley Max Everett, Mervyn George, QC Mather, The Hon. Robert	Liberal A.L.P. Liberal A.L.P. Liberal A.L.P. Liberal
Franklin	Barnard, Eric Walter Clark, The Hon. Douglas Frank Frost, Stewart Charles Hilton Gough, Stanley William Lowc, Douglas Ackley Neilson, William Arthur Pearsall, Geoffrey Alan	A.L.P. Liberal A.L.P. Liberal A.L.P. A.L.P. Liberal
Wilmot	Anderson, William Bessell, The Hon. Leonard Hubert Bethune, The Hon. Walter Angus (d) Braid, Ian Maxwell Cashion, Douglas Alfred Fagan, Roy Frederick Ingamells, The Hon. Christopher Robert (e)	A.L.P. Liberal Liberal Liberal A.L.P. A.L.P. Liberal

(a) Chairman of Committees.

(b) Deputy Premier in the Liberal-Centre Party coalition government.

(c) Leader of the Opposition.

(d) Premier of Tasmania.

(e) Speaker.

Parliamentary Elections

House of Assembly

Elections for the House of Assembly are conducted under the system sometimes called 'Hare-Clark' which can be classified as proportional representation by the single transferable vote. The system owes its popular name to Thomas Hare and a former Tasmanian Attorney-General, A. I. Clark, both of whom were instrumental in developing various aspects of the system. However, the principle itself was first suggested by Thomas Wright Hill in 1821.

The last general election for the House of Assembly was held on 10 May 1969. The following table shows the voting in general elections held for the House of Assembly since 1931:

Assembly Elections Since 1931

Year of Election	Electors on Roll	Votes Recorded		Informal Votes	
		Number	As Percentage of Enrolled Electors	Number	Percentage of Total Votes
1931	118,730	112,779	95.0	3,885	3.44
1934	127,681	120,622	94.5	3,855	3.20
1937	132,001	124,460	94.3	2,997	2.41
1941	139,234	127,034	91.2	6,344	4.99
1946	157,756	143,674	91.1	14,484	10.08
1948	161,088	148,588	92.2	5,866	3.95
1950	161,650	152,785	94.5	6,841	4.48
1955	173,165	162,637	93.9	6,158	3.79
1956	174,632	166,293	95.2	6,968	4.19
1959	180,344	170,559	94.6	9,816	5.76
1964	193,364	184,571	95.5	7,980	4.32
1969	210,268	198,571	94.4	9,248	4.66

The percentage of informal votes in the previous table is not particularly high, even though the voting papers for six or seven-member electorates are necessarily more complicated than those for single-member electorates. In Senate elections held in Tasmania, informal votes tend to be rather a large proportion of votes cast and, in the 1934 election, exceeded 16 per cent. In Assembly elections, only three preferences are compulsory whereas in Senate elections, the voter must indicate as many preferences as there are candidates.

The next table shows the number of electors on the divisional electoral rolls at the four most recent elections.

Number of Electors on Roll at Recent Elections

Division	Election			
	Senate 25 November 1967	House of Assembly 10 May 1969	House of Representatives 25 October 1969	Senate 21 November 1970
Bass	no. 37,840	no. 41,104	no. 40,926	no. 41,255
Braddon	39,485	43,383	43,897	44,367
Denison	33,473	(a) 44,595	44,386	43,532
Franklin	46,772	(a) 38,929	39,479	40,400
Wilmot	35,737	(a) 42,257	42,413	42,618
Total	193,307	210,268	211,101	212,172

(a) Electoral boundaries reviewed in November 1968.

Legislative Council

There are no general elections for the Legislative Council; three members retire each year except in every sixth year (e.g. 1977, 1983) when four members retire. At 31 December 1969, 175,282 electors were enrolled. In the last six years, votes cast at the annual elections have varied from 78.0 to 91.8 per cent of enrolled electors in individual electorates.

Salaries of Members of Parliament

Committees of Enquiry

In determining the level of parliamentary salaries in State and Commonwealth legislatures, it has been fairly general practice in the last decade to establish committees of enquiry, the members of which are drawn from outside parliament. The committees of enquiry are required to make recommendations but their findings are treated by the parliaments as being merely a guide, and the legislation fixing new salaries and allowances has not necessarily followed the committees' recommendations in detail.

Parliamentary Salaries Tribunal

In 1962, the Tasmanian Parliament established a new principle by passing an Act for the setting up of a parliamentary salaries tribunal; this was to be a committee with members drawn from outside the Parliament but its findings, instead of being recommendations, were to be determinations binding on the Crown. In effect, the Tasmanian Parliament has adopted the principle of wage and salary fixation by independent tribunal.

The Tribunal's decision, operative from 1 October 1970, varied basic salaries and allowances. Interstate travelling allowances were fixed at a daily rate of \$12 for Ministers and \$14 for the Premier. The back-benchers' accommodation allowance, payable to members who are absent from home when the Houses are sitting, was set at \$12 a day.

Variations in the salaries and allowances determined by the Parliamentary Salaries Tribunal are shown in the tables that follow:

Determinations of the Parliamentary Salaries Tribunal, 1964, 1967 and 1970
(£)

Particulars	Rate Per Annum from 1.10.1964	Rate Per Annum from 1.10.1967	Rate Per Annum from 1.10.1970
BASIC SALARY OF MEMBERS			
Member, Legislative Council ..	4,600	6,000	7,200
Member, House of Assembly ..	4,600	6,000	7,200
SPECIAL RATES (GROSS) (a)			
Cabinet—			
Premier (b)	10,000	13,300	16,000
Deputy-Premier	8,200	11,300	13,400
'Senior' Ministers	7,600	10 200	12,200
'Junior' Ministers	7,600		
Legislative Council—			
President	6,200	8,060	9,600
Chairman of Committees	5,400	7,300	8,600
Government Leader	7,000	9,100	10,300
Deputy Leader	5,250	6,800	8,000
House of Assembly—			
Speaker	6,200	8,060	9,600
Leader of Opposition	(c) 7,400	(c) 9,950	11,700
Deputy Leader	5,400	7,020	8,400
Chairman of Committees	5,400	7,300	8,600

(a) All rates include the basic salary received by the office-holder as a member.

(b) Excludes entertainment allowance of \$700 (1964) and \$900 (1967 and 1970).

(c) Excludes travelling allowance of \$500 (1964); and \$650 (1967).

Electorate Allowances: Parliamentary Salaries Tribunal, 1964, 1967 and 1970

(\$)

Electorate	Rate Per Annum from 1.10.1964	Rate Per Annum from 1.10.1967 (a)	Rate Per Annum from 1.10.1970 (a)
Legislative Council—			
(i) Buckingham	600	700	750
Hobart		600	650
Newdegate		600	650
Queenborough		600	650
(ii) Cornwall	750	600	700
Launceston		600	700
Westmorland		800	800
(iii) Derwent	900	1,100	1,075
Huon		1,000	1,075
Mersey		900	975
Tamar		1,000	1,075
West Devon		900	975
(iv) Gordon	1,000	1,000	1,475
Macquarie		1,100	1,175
Monmouth		1,000	1,375
Pembroke		1,400	750
(v) Meander	1,100	1,200	1,275
Russell		1,400	1,475
South Esk		1,400	1,475
House of Assembly—			
Denison	1,100	1,100	1,100
Franklin	1,450	1,650	1,500
Bass	1,500	1,700	1,850
Braddon	1,700	1,900	2,100
Wilmot	1,850	2,100	2,500

(a) Ministers and Leader of Opposition receive only 75 per cent.

The 1964 determination removed the salary distinction between 'senior' Ministers and 'junior' Ministers; the tribunal found that the distinction rested solely on historical grounds. In 1967, home telephone rentals were paid for members for the first time. This practice was continued in the 1970 determination.

THE GOVERNMENT OF 1972

The system of responsible government in Tasmania requires that the executive power of the State shall be exercised by the Cabinet; in exercising this power, the Ministers of the Cabinet are held responsible for the actions and administration of government departments and other governmental authorities which have been created for three basic purposes: (i) to put into practice the laws made by the Parliament; (ii) to give effect to the decisions of the Ministry; and (iii) to advise the Ministry on matters of policy.

The next section lists the departments and authorities under the various Ministers but the allocation of responsibility is subject to change and Cabinet has the power to vary it at any time. The chapter references indicate where the reader may find additional data on the department or authority in this volume. A detailed account of the work of the various departments and authorities appeared in the first two issues of the Year Book series.

Premier, Treasurer and Minister in Charge of the Hydro-Electric Commission

Premier's and Chief Secretary's Dept. The Hydro-Electric Commission (Ch. 8) Treasury Dept (Ch. 14) Government House	Agent-General's Office Supply and Tender Dept Government Printing Office Government Insurance Office
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Attorney-General, Minister for Police and Licensing

Attorney-General's Dept Solicitor General's Dept Supreme Court and Sherriff's Dept (Ch. 9) Magistracy Dept and Court of Requests (Ch. 9) Parliamentary Draftsman's Dept	Public Trust Office Registrar General's Dept (Ch. 5) Prisons Dept (Ch. 9) Police Dept (Ch. 9) Licensing Court (Ch. 9)
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Minister for Education

Education Department (Ch. 10)

Minister for Lands and Works and Local Government

Dept of Public Works Dept of Lands Rivers and Waters Supply Commission (Ch. 4) Metropolitan Water Board (Ch. 4)	Dept of Film Production Town and Country Planning Commission (Ch. 4) Local Government Office
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Deputy Premier, Chief Secretary and Minister for Tourism

Premier's and Chief Secretary's Dept. Audit Dept Public Service Commissioner's Dept Electoral Dept (Ch. 3) Dept of Labour and Industry (Ch. 13) Public Service Tribunal Dept (Ch. 13)	Tasmanian Grain Elevators Board (Ch. 4) Social Welfare Dept (Ch. 11) The State Library (Ch. 10) Fire Brigades Commission (Ch. 12) Rural Fires Board (Ch. 9) Miners Pensions Board (Ch. 14) Dept of Tourism and Immigration (Ch. 3)
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Minister for Agriculture and Forests

Dept of Agriculture (Ch. 6) Inland Fisheries Commission (Ch. 7) National Parks and Wild Life Advisory Service	Agricultural Bank of Tasmania (Land settlement function) (Ch. 6) Forestry Dept (Ch. 7)
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Minister for Housing, Industrial Development and Sea Fisheries

Housing Dept (Ch. 9) Directorate of Industrial Development (Ch. 8)	Agricultural Bank of Tasmania (Housing function) (Ch. 9) Sea Fisheries Division (Ch. 7)
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Minister for Transport, Racing and Gaming and Mines

The Transport Commission (Ch. 15) Metropolitan Transport Trust (Ch. 15)	Racing Commission (Ch. 14) Mines Dept (Ch. 7)
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Minister for Health and Road Safety

Dept of Health Services (Ch. 11)	Mental Health Services Commission (Ch. 11)
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ACTS OF STATE PARLIAMENT

Summary of Recent Acts

The examples below illustrate the interpretation of the notations used in the following list of Acts:

- (A 1952)—An Act to amend an Act of the same title passed in 1952.
- (A Audit Act 1952)—An Act to amend an Act of this title passed in 1952.

(R 1952)—An Act to repeal an Act of the same title passed in 1952.
 (R Audit Act 1952)—An Act to repeal an Act of this title passed in 1952.

(P 1952)—An Act to be incorporated and to be read as one with the Principal Act passed in 1952.

(P Audit Act 1952)—An Act to be incorporated and to be read as one with the Principal Act of this title passed in 1952.

(RS 1952)—An Act to repeal an Act of the same title passed in 1952 and to substitute new legislation.

(RS Audit Act 1952)—An Act to repeal an Act of this title passed in 1952 and to substitute new legislation.

State Acts, 1969

Number	Short Title and Summary
1	Supply 1969-70—appropriation from Loan Fund.
2	Supply 1969-70—appropriation out of Consolidated Revenue.
3	Agent-General (A1911)—salary increase.
4	Audit (A1918)—salary increase.
5	Public Service (A1923)—salary increase.
6	Tasmanian Orchestra (Continuation) (A1951)—miscellaneous provisions.
7	Flinders Marine Board Loan (A1952)—borrowing powers.
8	Racing and Gaming (A1952)—commission paid by bookmakers.
9	Judges' Salaries (A1920)—salary increase.
10	Education (A1932)—State aid.
11	Primary Producers Relief (A1968)—drought relief.
12	Kennerley Children's Homes—establishment of children's homes from sale of existing lands.
13	Consolidated Revenue Fund Appropriation 1969-70—Consolidated Revenue.
14	Public Servants' Retiring and Death Allowances (A1925)—miscellaneous provisions.
15	Elderly Citizens' Clubs and Youth Centres (A1966)—borrowing of moneys, debt charges.
16	Loan Fund Appropriation 1969-70—Loan Fund.
17	Consolidated Revenue Fund Supplementary Appropriation 1968-69—appropriation of \$1,866,769.43.
18	Land Tax 1969—rates of land tax for 1969-70.
19	Bills of sale (A1900)—miscellaneous provisions.
20	Stipendiary Magistrates 1969—appointment, salary and tenure of office.
21	Deceased Persons' Estates Duties (A1931)—allowance for duty paid abroad.
22	Tasmanian University (A1951)—election of Chancellor and Vice-Chancellor.
23	Companies (Death Duties) 1969—duty on the death of the holder of securities of a company.
24	Licensing (A1932)—payment of fees, forfeiture of licences.
25	Wheat Industry Stabilization (A1968)—wheat for non-human consumption, modification of production quotas.
26	Legal Assistance (A1962)—Committee to administer scheme; powers of committee to recover costs.
27	Motor Vehicles Tax (A1917)—rates of tax.
28	Dairy Produce (A1932)—labelling of table and cooking margarine, prohibition of manufacture and sale of cooking margarine and butter containing certain substances.
29	Water (A1957)—right of H.E.C. to sell water.
30	Railway Management (A1935)—land rights, suspension of employees, disciplinary powers.
31	Co-operative Industrial Societies (A1928)—compilation of annual returns.
32	Hobart Marine Board Loan (A1947)—change in borrowing powers.
33	North Esk Regional Water (A1960)—permission to carry out works in connection with water supply.
34	West Tamar Water (A1960)—permission to carry out works in connection with water supply.
35	Launceston Corporation (A1963)—regional waterworks.

State Acts, 1969—continued

Number	Short Title and Summary
36	Wheat Quotas (In accordance with <i>Wheat Industry Stabilization Act 1968</i>)—Tasmanian wheat quotas; wheat Quota Committee and powers.
37	State Sinking Fund (A1929)—powers and duties of commissioners.
38	Superannuation (A1938)—cost of living adjustment, increases in new pensions.
39	Cressy-Longford Irrigation—provision of financial assistance for proposed water works.
40	War Service Land Settlement (A1950)—power of Board to loan moneys for waterworks.
41	Closer Settlement (A 1957)—power of Board to loan monies for waterworks.
42	Launceston Marine Board Loan (A1951)—borrowing powers.
43	Traffic (A1925)—disqualification of drivers, power of police officers, prohibition of driving motor vehicles while blood alcohol level exceeds 0.08%.
44	Subordinate Legislation Committee—establishment of Parliamentary standing committee on Subordinate Legislation and its functions.
45	Dentists (A1919)—registration of dentists and dental mechanics.
46	Stamp Duties (A1931)—provisions relating to hire purchase agreements, contracts of sale, adhesive duty stamps.
47	Public Service (No. 2) (A1923)—increments and special allowances.
48	Constitution (A1934)—introduction of triennial parliaments.

State Acts, 1970

Number	Short Title and Summary
1	Public Holiday (Royal Visit)—granting of public holiday for the Royal visit.
2	Anzac Day Observance (A1929); A Sunday Observance Act 1968)—miscellaneous amendments including sports, etc.
3	Racing and Gaming (A1952)—amend provisions for totalizator tax and licences for Anzac Day meetings.
4	Egg Marketing (A1957)—miscellaneous amendments; constitution of Board.
5	Queenstown Cemetery—improvement of Queenstown Cemetery.
6	Dairy Produce (A1932)—amend qualifications for employment.
7	Mowbray Memorial Swimming Pool Loan Committee—guarantee repayment of loan.
8	Primary Producers' Relief—provide financial assistance to orchardists.
9	Companies (Death Duties) (A1969)—amend duty payable on death of a holder of securities of a company.
10	Potato Marketing Board (A1952)—qualifications for election and voting at elections.
11	Public Service (A1923)—appointment of a Commissioner.
12	Audit (A1918)—increase salary of Auditor-General.
13	Charitable Institutions (Repeal) (RS 1888)—provide for the continuation of institutions registered under the 1888 Act.
14	Plumbers' Registration (A1951)—qualifications for registration of plumbers.
15	Transport (A1938)—miscellaneous amendments.
16	Inflammable Liquids (A1929)—amendments to regulations.
17	Trustee (Insured Housing Loans) (P1898; R Housing Loans (Powers of Trustee) Act 1966)—authorise investment of trust funds in certain insured housing loans.
18	Loan Fund Appropriation (No. 2) 1969-70—authorise the issue and application of moneys from the Loan Fund.
19	Agent-General (A1911)—increase salary of Agent-General.
20	Daylight Saving (A1968)—provide for continuation of daylight saving on permanent basis.
21	Consolidated Revenue Fund Supply 1970-71—issue and appropriation of funds.
22	Weights and Measures (A1934)—miscellaneous amendments including package markings and approval of brands.
23	Judges' Pensions (A1951)—increase pension rates of Supreme Court Judges and widows.
24	Loan Fund Supply 1970-71—issue and appropriation of Loan Fund.
25	Trustee Companies (A1953)—miscellaneous amendments.
26	Consumer Protection—establish a Consumer Protection Council.

State Acts, 1970—continued

Number	Short Title and Summary
27	Education (A1932)—loans and subsidies.
28	Marine (A1921)—application of revenues.
29	Wrest Point Reclamation—reclamation of land from the sea for Wrest Point Casino.
30	Land Valuation (A1950)—amend title of chief valuer from 'Under Treasurer' to 'Secretary for Lands'.
31	Stanley Cool Stores (A1945)—miscellaneous amendments; powers and functions of the board.
32	Tourism Development—improve provisions for tourism; various Acts repealed.
33	Australian and New Zealand Banking Group—facilitate merger of the English, Scottish and Australian Bank and the Australia and New Zealand Bank.
34	Consolidated Revenue Fund Appropriation 1970-71—issue and appropriation of funds.
35	Loan Fund Appropriation 1970-71—appropriation of funds and borrowing powers.
36	Wages Board (A1920)—miscellaneous amendments; constitution of boards.
37	Public Health (A1962; A Fisheries Act 1959)—prevention of pollution.
38	Land Tax (P Land and Income Tax Act 1910)—amend rates of land tax.
39	Consolidated Revenue Fund Supplementary Appropriation 1969-70—appropriation of Funds.
40	Fire Damage Relief (A1967)—provision for the erection of houses in certain cases; special powers of Minister in relation to housing.
41	Crown Lands (Miscellaneous Provisions) (P1935)—miscellaneous provisions.
42	Fire Brigades (A1945)—miscellaneous amendments; duties and powers of commission and long service leave.
43	Railway Management (A1935)—amend powers of Commission as to carriage of goods by road.
44	Crown Servants' Reinstatement—provide for reinstatement of former Crown servants.
45	Public Servant's Retiring and Death Allowances (A1925)—amendments relating to broken service.
46	Superannuation (A1938)—re-employment under Crown Servants' Reinstatement Act 1970.
47	National Parks and Wildlife (R Scenery Preservation Act 1915; R Animals and Birds Protection Act 1928)—provision for the establishment and management of national parks and other reserves.
48	Police Offences (A1935)—committal of offenders to institutions.
49	Royal Tasmanian Society for the Blind and Deaf (A1963)—allow the acquisition of land and house or land and the erection of a house by the Board for any member of the Board.
50	Stamp Duties (Receipts) (P1931)—suspend provisions relating to duty payable on receipts.
51	Audit (No. 2) (A1918)—repeal of section of original Act.
52	Public Service (No. 2) (A1923)—salaries of officers.
53	State Employees (Long Service Leave) (A1950)—provisions relating to employees transferring from other authorities, right of an employee to elect retirement in certain cases.
54	Public Accounts Committee—provide for the establishment of a parliamentary standing committee on public accounts.
55	Tamar Yacht Club Loan Guarantee—guarantee repayment of loan.
56	Pea Industry Subsidy Agreement—ratify and approve agreements relating to the payment of subsidies.
57	Testator's Family Maintenance (A1912)—miscellaneous amendments.
58	Timber Promotion—allow establishment of a Tasmanian Timber Promotion Board for the promotion of wood, provision of funds.
59	Architects (A1929)—amend qualifications for, and certificates of, registration, prohibited practices, other miscellaneous amendments.
60	Local Government (A1962)—miscellaneous amendments.
61	Metropolitan Water (A1961)—power to borrow money from the public, temporary investment.
62	Traffic (A1925)—driver's licence fee increase.
63	Water (A1957)—miscellaneous amendments.
64	Marine (No. 2) (A1921)—miscellaneous amendments.
65	Public Works Committee (A1914)—miscellaneous amendments.
66	Trustee (A1898)—authorised investments.

State Acts, 1970—continued

Number	Short Title and Summary
67	Hydro-Electric Commission (Power Development) (A1967)—expenses of construction of works, various other amendments.
68	Police Association Loan Guarantee—guarantee repayment of loan.
69	Department of Lands and Surveys—re-organisation of the Department.
70	Urban Farming Land Taxation—relief from land tax inflated by development potential.
71	Renison Limited (Zeehan Lands)—sale of Crown Land to Renison Ltd.
72	Legal Practitioners (A1959)—miscellaneous amendments.
73	Superannuation (No. 2) (A1938; A1968)—miscellaneous amendments.
74	Workers' Compensation (A1927)—liability of employers, settlement of claims, various amendments.
75	Apprentices (A1942)—amend constitution and proceedings of the Commission.
76	Retirement Benefits—benefits payable to State or State authority employees on retirement, benefits payable to families of employees.
77	Road Safety (Alcohol and Drugs) (A Evidence Act 1910; A Traffic Act 1925)—restrictions on drivers after consuming intoxicating liquor or drugs.
78	Beauty Point Landslip—provision for acquisition and clearance of certain land at Beauty Point.
79	Prison (A1868)—appointment of Controller of Prisons and other prison officers, functions, various other amendments.
80	Constitution (A1934)—alteration of House of Assembly quorum; miscellaneous amendments.
81	Hydro-Electric Commission (Mersey-Forth Power Development) (A1963)—expenses of construction work.

OMBUDSMAN

Introduction

The primary role of an 'Ombudsman' is to investigate grievances against the operations of Government. In countries where an ombudsman operates, the methods of investigation used and recommendations put forward have proved to be quite effective. (In a four-year period in the 1960s the Swedish ombudsman was responsible for 27 prosecutions and five disciplinary actions while in the same period he made 1,200 suggestions and reprimands).

A Bill first introduced in the Tasmanian Parliament in November 1969 envisaged the establishment of a 'Parliamentary Commissioner for Administrative Investigations' (Ombudsman) with powers to investigate actions of government departments and authorities and would have been the first time such a Commissioner had been installed by a State in a federation rather than by a central government. Following defeat of the proposal in the Legislative Council in 1970, the Government re-introduced the Bill in the 1971 session and a Parliamentary Select Committee was established to investigate the need for an Ombudsman or Parliamentary Commissioner.

Under the proposed Act, the Commissioner is appointed by the Governor for a five-year term, at a salary to be determined by Parliament. Members of Parliament are ineligible for the office. During any period of vacancy in the position, the functions of the Commissioner are exercised by the Public Service Commissioner.

Rules of Parliament may be made for the guidance of the Commissioner in the exercise of his functions. He may recommend the appointment of such staff as he considers necessary.

Investigations and Remedial Action

Complaints under the Act are to be made to the Commissioner in writing, not later than twelve months after the matter was alleged to have occurred. The Commissioner may refuse to investigate a complaint should he feel that it is trivial, frivolous or not made in good faith. Parliament or its committees,

may refer matters to the Commissioner for investigation. Investigations may also be initiated by the Commissioner himself. It should be noted that the Commissioner will not be empowered to investigate actions by Cabinet, by legal representatives of the Crown or those declared by law as being final.

Before proceeding with an investigation, the Commissioner is to inform the principal officer of the department or authority concerned. He may enter any premises of the bodies involved, having given prior notice of his intention to do so, and may inspect any relevant documents. However, no person will be compelled to give any evidence or produce any document that he could not be compelled to give or produce before a court.

Investigations are to be held in private and information obtained will not be disclosed unless directly relevant to the complaint. If necessary, the Commissioner may apply to the Supreme Court for a decision concerning his jurisdiction to investigate any matter. Furthermore, no legal proceedings may be brought against the Commissioner or his officers without leave of the Supreme Court.

Upon completion of an investigation, the Commissioner is to make a report, and any recommendations he deems appropriate, to the principal officer concerned (also sending a copy to the responsible Minister). If, after a reasonable period of time, it appears that no remedial steps have been taken by the principal officer, the Commissioner may send a copy of the report and recommendations to the Premier, after which he may lay the particular report before Parliament.

CONSUMERS PROTECTION COUNCIL

Council

The eight-member Consumers Protection Council was established under the provisions of the *Consumers Protection Act* 1970 with the primary function of investigating matters affecting the interests of consumers. At the time of the Council's formation only two other Australian States (New South Wales and Victoria) had enacted similar legislation. Under the *Consumers Protection Act* 1970 the Council is to consist of a chairman; one representative each of manufacturers; retailers or persons providing services; advertisers; and four representatives (including two women) of consumers. Council members are appointed by the Governor for terms not exceeding five years.

Functions

In addition to investigating matters affecting the interests of consumers, Council functions are: (i) the making of recommendations to the responsible Minister with respect to any matter calculated to protect the interests of consumers; (ii) consultation with manufacturers, retailers and advertisers on any such matter; and (iii) the furnishing to the Minister of reports on matters affecting the interests of consumers and Council activities which the Council considers should be notified to Parliament.

When undertaking investigations into complaints the Council has the powers of a duly constituted board of inquiry and under the Act an officer can be authorised by the Minister to make specified inquiries, require production of documents, enter and search premises and impound or retain documents relating to the inquiry.

A \$500 penalty may be imposed on anyone who, in the course of an inquiry and without reasonable excuse, refuses to supply information or documents or who supplies false or misleading information.

Within six months of commencing operations the Council dealt with about 500 complaints from consumers.

Complaints of a general nature recently investigated include bread and milk pricing and reported profiteering during the 1971 maritime strike.

The Council is not a quasi-price control authority and has no power of compulsion, but obtains its objectives by negotiation with interested parties. In addition, the Council has the power to recommend changes in legislation and liaises closely with the Federal Trade Practices Tribunal when dealing with matters involving restrictive practices.

TOURISM IN TASMANIA

Introduction

The *Tourism Development Act* 1970 came into force on 18 January 1971 establishing a five-man Tourism Development Authority. Under the Act the Authority became the head of the reconstituted Department of Tourism and Immigration.

The Director-General, as Executive of the Authority, is responsible for the operations and activities formerly carried out in Tasmania under the *Tourist Bureau Act* 1934, as amended; under the *Guest Houses Registration Acts* 1937 and 1962; and the *Tourist Accommodation Loans Acts* 1945 and 1964.

The *Tourism Development Act* 1970 retains the functions defined under the provisions of the *Tourist and Immigration Department Act* 1934. The re-named department (Department of Tourism and Immigration) is to continue its activities of: (i) acting as a travel agent; (ii) arranging tours, sight-seeing, etc.; (iii) development of tourist attractions; and (iv) promoting immigration to Tasmania, but is now under the policy control of the Tourism Development Authority.

In addition, the Act establishes various tourism advisory committees and creates provision for the granting of loans, guarantees or grants for the construction of accommodation, transport or other facilities for tourists.

Tourism Development Authority

Administration

The Tourism Development Authority is the administrative head of the Tourism and Immigration Department responsible to the Minister for Tourism for the policy, management and control of the Department. The Director-General of Tourism is both the head of the department and the chairman of the Authority. Private enterprise is represented on the Authority by two persons appointed by the Governor for three-year terms. The Governor also appoints a government representative to the Authority. The fifth member is the Director of the Department of Tourism and Immigration.

The Authority meets as required by the Director-General although a member has the right, with the approval of the Minister, to request a meeting.

Advisory Committees

The Authority has established a number of advisory committees, the most important being listed below:

Department of Tourism: This committee is to assist the Director in the development of the activities of the department.

Finance: Established to take over the functions of the *Tourist Accommodation Loans Act 1945*, the committee's financial powers are now those under the *Tourism Development Act 1970* (basically a restatement of powers held under the earlier Act with additional powers in respect of transport and other facilities for travellers and allowing for grants and guarantees).

Research: A research committee has been established to develop data collection and to undertake market research into tourism.

Co-ordination of Private Enterprise: The committee has been set up to co-ordinate the activities of the Tasmanian Tourist Council, a private enterprise organisation, with those of the Authority.

Other Committees: Specialist area committees have been established to foster the development of Port Arthur and the State's National Parks; to promote the Hobart Casino; to sponsor cultural affairs; to investigate developmental projects; and to ensure collaboration between business, industry and government agencies.

Department of Tourism and Immigration

Reservations

The Department of Tourism and Immigration through its offices and agencies is engaged in tourist promotion and the handling of reservations for travel and accommodation; four offices operate in other States and five in Tasmania. The following table shows the receipts of the Department for recent years:

Gross Receipts (a) of the Tourism and Immigration Department
(\$'000)

(Source: Department of Tourism and Immigration)

Office	1965-66	1966-67	1967-68 (b)	1968-69	1969-70
Tasmania—					
Hobart	535	606	628	682	794
Launceston	126	135	140	164	194
Devonport	72	72	70	79	93
Burnie	82	76	68	71	99
Queenstown	23	37	46	49	55
Other States—					
Melbourne	1,015	1,130	1,090	1,196	1,453
Sydney	903	831	820	1,017	1,168
Brisbane	445	447	376	453	515
Adelaide	365	392	366	402	468
Total	3,563	3,727	3,604	4,113	4,837

(a) Receipts in respect of travel, accommodation and associated items.

(b) Receipts affected by severe bushfires.

The significance of Melbourne and Sydney as tributary areas for tourism to Tasmania is clearly evident in the previous table; in total, over fifty per cent of the receipts of the department are generated from these two cities.

Accommodation Loans

Under the provisions of the *Tourist Accommodation Loans Act 1945* and 1964, loans have been made for the construction of either new accommodation or for rebuilding existing structures. To the end of 1969-70 a total of \$3,073,228 had been advanced (the outstanding debt being \$2,008,217) which was used for the construction of 1,027 bedrooms accommodating 2,091 persons.

The following table shows the number of loans made and the expenditure incurred by the Tourist Accommodation Loans Committee. The regions in the table should not be confused with those used by the Deputy Commonwealth Statistician for statistical purposes.

Expenditure and Number of Loans Made by the Tourist Accommodation Loans Committee up to 30 June 1970

(Source: Department of Tourism and Immigration)

Particulars	Tasman Peninsula and East Coast	Hobart and Suburbs	Launceston and Tamar Valley	Midlands	North-West Coast and Bass Strait Islands	West Coast	Total
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NUMBER OF LOANS, ETC.

Applications, 1969-70 ..	6	4	5	2	9	3	29
Loans Approved for New Establishments (a)—							
Licensed	4	2	2	..	3	2	13
Unlicensed	3	3	2	..	9	1	19
Loans for Additions or Rebuilding (a)—							
Licensed	4	..	4	2	5	1	16
Unlicensed	1	1	..	..	..	..	2
Total	12	6	8	2	17	4	49
Additional Beds (b) ..	464	312	355	36	702	222	2,091

AMOUNT OF LOANS, ETC. (\$'000)

Loans Approved—1969-70 .. ..	..	..	..	..	41	80	121
Total (c)	651	253	498	58	1,107	527	3,094
Advances Made—1969-70 .. ..	..	..	..	..	171	229	400
Total (c)	651	253	498	58	1,107	506	3,073
Repayments Made—1969-70	26	13	26	4	25	13	109
Total (c)	236	188	189	33	340	77	1,065

(a) Aggregate number of loans since inception of scheme.

(b) Total additional beds provided since inception of loan scheme.

(c) Aggregate approvals, advances and repayments at 30 June 1970.

As an indication of the development in the accommodation field, the next table shows the value of all hotels and guest houses completed in Tasmania since 1966-67 whether or not loans were provided under the *Tourist Accommodation Loans Act 1945*.

At the end of September 1970 hotels and guest houses valued at \$3,502,000 were under construction.

**Value of Hotels, Guest Houses, etc. Completed
(\$'000)**

Period	Urban Hobart	Urban Launceston	Remainder of State	Total
1966-67	452	219	630	1,301
1967-68	326	164	444	934
1968-69	1,023	111	379	1,513
1960-70	469	108	1,530	2,107
1970-71	139	157	2,313	2,609

Other Activities of the Department

Caves: The department is responsible for the control and operation of the Marakoopa and King Solomon Caves at Mole Creek and the Newdegate Cave and thermal pool at Hastings. A fourth cave, Gunns Plains, is open to the public for inspection. This cave is leased to a private operator by the Scenery Preservation Board.

The next table shows the number of persons viewing the public caves since 1964-65. The slight downward trend evident in attendance levels at the Newdegate Cave in 1967-68 was due to a reduction in tourist activity following the widespread summer bushfires of 1967. In addition, poor road conditions restricted access to both the Newdegate and Marakoopa Caves during this period.

**Admissions to Scenic Caves
(Persons)
(Source: Department of Tourism and Immigration)**

Cave	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70
Departmental (a)—						
Newdegate ..	14,132	17,539	15,722	15,176	18,061	19,191
King Solomon ..	6,436	7,441	7,653	8,781	10,039	11,611
Marakoopa ..	4,652	4,291	5,652	5,073	5,569	7,079
Other, Gunns Plains (b)	<i>n.a.</i>	3,100	3,336	3,458	4,279	4,432
Total ..	(c) 25,220	32,371	32,363	32,488	37,948	41,713

(a) Controlled by the Department of Tourism and Immigration.

(b) Controlled by Scenery Preservation Board.

(c) Excludes Gunns Plains Cave.

Immigration: British migration is fostered by the Assisted Passage Scheme which commenced in 1947. The department also operates two other assisted passage schemes: (i) the Tasmanian Government 200 scheme aimed at recruiting skilled immigrants; and (ii) the Tasmanian Government 400 scheme which assists semi-skilled immigrants.

Tourist Industry Survey

The State Treasury in conjunction with the then, Tourist and Immigration Department, undertook a survey of the tourist industry in the twelve-month period from 1 April 1968 to ascertain its importance to the State.

During the survey period 282,000 persons departed from the State; of these 104,000 were holiday visitors returning to their homes; and an additional 77,000 were persons who had attended sporting carnivals, conferences and similar functions, who were not regarded as holiday tourists (for survey purposes) due to the rotational nature of their functions.

All spending on fares, accommodation, personal spending, etc. by the 104,000 holiday tourists was calculated as adding \$10 million to the gross income of the State. If the spending by the other 77,000 visitors is included then tourism increased the gross income by approximately \$16 million during the survey period.

Chapter 4

LOCAL GOVERNMENT

GENERAL DESCRIPTION

Historical

Introduction

In Tasmania, the functions of local government are more restricted than in some other countries, as the State Government takes direct responsibility for important services such as the police, education, housing, public transport, etc. This peculiarity is not confined to Tasmania and is encountered in the other Australian States, where central control is exercised over functions often delegated to local government authorities in overseas countries; the origin of this tendency probably lies in early colonial history when the continent was virtually empty but the apparatus of government existed at each of the new coastal settlements (Sydney, Hobart, Perth, Melbourne, Adelaide, and Brisbane, in order of age). In the Australian situation, strong central administrations came first and local government was a much later growth, the initiative for its creation often coming from the central administration itself in the respective colonies.

The development of local government in Tasmania falls into three distinct phases:

Hobart and Launceston

Hobart Town was granted elected commissioners in 1846, and under an Act of 1852, both Hobart and Launceston were given elected municipal councils. In 1857 the City of Hobart was incorporated, as was the Town of Launceston a year later. Launceston was proclaimed a city in 1888. For the next 76 years, these were the only two cities in the State, but in 1964 the number was increased to three when Glenorchy was granted city status.

The form of local government in Hobart and Launceston is governed by separate corporation acts for each authority; in the case of Glenorchy, however, its operation as a city is provided for in the *Local Government Act 1962*.

Rest of State before 1906

Prior to the passing of the *Local Government Act 1906*, there was a great variety of elected Boards, Trusts, etc. in Tasmania, each in control of a district for certain specified objects, but they were all abolished by that Act. The principal local authorities were:

(i) *Road Districts*: The main legislation was the *Roads Act 1840*, the *Cross and Bye Roads Act 1851* and the *Main Roads Act 1880*. The general effect of these Acts was to partition the State into districts and to set up elected bodies of trustees whose responsibility was confined to roads.

(ii) *Rural Municipalities*: Under the *Rural Municipalities Act 1858*, any town, electoral, police or road district could be proclaimed a rural municipality with a council elected by the ratepayers. By 1865, 18 rural municipalities had been constituted and the whole State (excluding Hobart, Launceston and Tasman Peninsula) was divided into 30 areas, each to be a municipal district.

(iii) *Town Boards*: Under the *Town Boards Act* 1884, the Governor could constitute a town, provided that it was not situated within the boundaries of a rural municipality. Trustees elected by the ratepayers exercised the provisions of the Police Act with regard to the health and improvement of towns and in 1885 every town was declared to be a road district. In 1907, the last year of operation of town boards, there were 23 in existence.

Other Authorities: The type of local authority described in the previous sections by no means covers the complete field. Examples of other authorities include fruit boards, rabbit trusts, boards of health, boards of works, recreation ground trusts and school boards. The general picture was one of complexity and confusion; the main need was obviously a reduction in the number of separate authorities and the creation of municipalities with responsibility for *all* local government functions in their respective areas. A simplification along these lines was achieved by the *Local Government Act* 1906.

Rest of State after 1906

At present, local government functions throughout the State, the relevant bodies being the Hobart, Launceston and Glenorchy city corporations and 46 municipalities. The genesis of this framework is found in the *Local Government Act* 1906 under which a Commission was appointed to divide the State into not more than 60 districts and to subdivide each district into not less than three nor more than five wards, each ward including as nearly as practicable an equal rateable area. The Commissioners were empowered to adjust the boundaries of adjoining municipalities, provided that in so dividing the State any town could be deemed excluded from such boundaries. The cities (at that time, Hobart and Launceston) were not to be included, and were exempt from the provisions of the Act.

The Commissioners, in terms of the Act, divided the State into 49 districts but the later absorption of the municipalities of Queenborough and New Town into the City of Hobart reduced the number to 47; the granting of city status to Glenorchy in 1964 resulted in the present total of 46. The decision to create 49 districts may seem somewhat extravagant for a State with a population of under 190,000. But in 1906, the motor car was still a novelty and roads were poor. The creation of fewer but larger districts would have made it extremely difficult for the elected councillors to meet with any regularity, or for municipal inspectors, etc. to travel in their area of supervision.

Before the passing of the 1906 Act, the State had been divided into districts of different kinds, each controlled for a specific purpose by a Board, Trust or Council. The effect of the Act was to abolish all the separate districts as well as the rural municipalities and town boards and to set up new authorities, uniformly constituted and exercising similar functions.

Since 1906, there has come into effect a large body of legislation affecting local government and there has been some widening of function. Accordingly a new consolidating Act, the *Local Government Act* 1962, was passed and still operates.

City of Hobart

Description

The City of Hobart (42°54'S; 147°21'E) is the seat of the State Government and capital of the State of Tasmania. Founded in 1804, Hobart is the second oldest capital city in Australia.

Colonel Thomas Davey (Lieutenant-Governor, 1813-1817)
(State Archives)



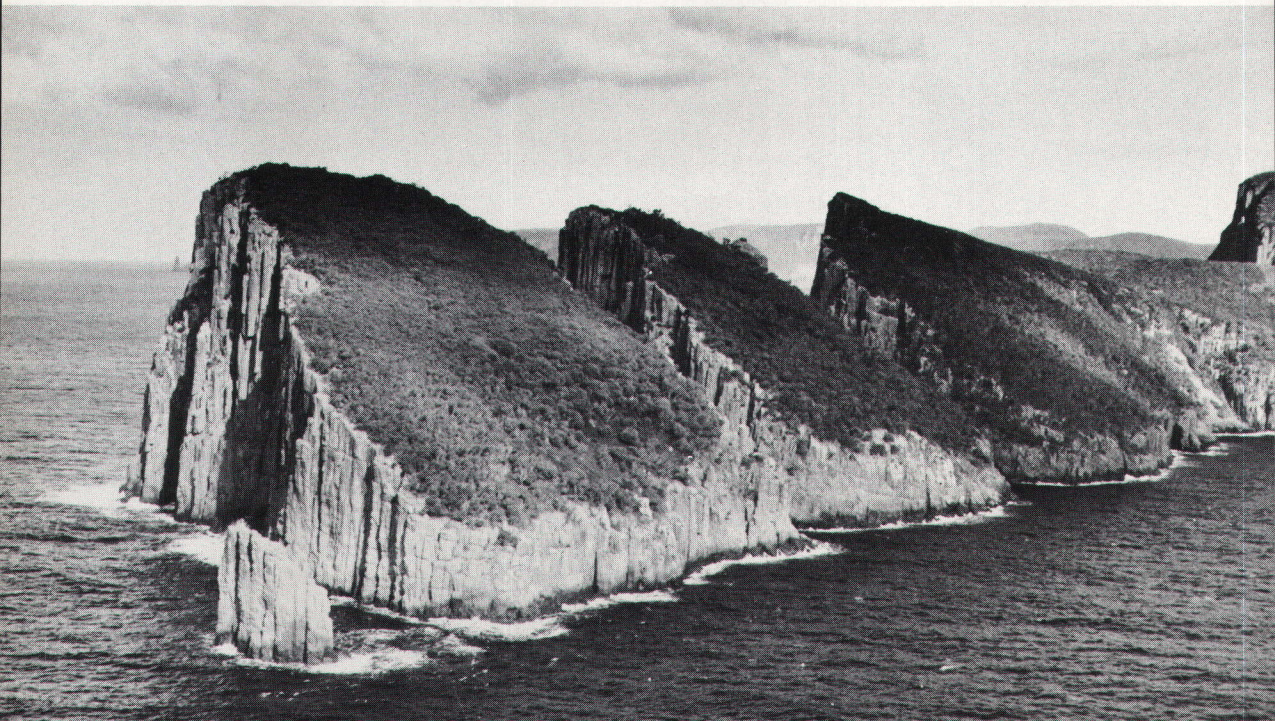
Colonel William Sorell (Lieutenant-Governor, 1817-24)
(State Archives)

*The Mt Anne circuit behind Lake Judd, from Schnells Ridge
(Richard Bennett)*



The Lanterns, off Cape Hawy

(Dept of Film Production)



The population of the City of Hobart was 53,257 and of the Hobart Metropolitan Area 119,469 at the Census of 30 June 1966. Estimated population at 30 June 1970 for the City of Hobart was 52,900 and for Urban Hobart (formally known as the 'Hobart Metropolitan Area') 127,260. Further detailed information on the population centred on Hobart is contained in Chapter 5, 'Demography'.

Hobart City, covering 30.8 square miles, is built on the plains and foothills below Mt Wellington (4,166 feet) on the west, with the River Derwent on the east. The city has a first-rate deep-sea port where, during World War II, ships of up to 50,600 tons berthed without assistance. The eight-mile road to the summit of Mt Wellington passes through an enormous natural park which is the source of part of the city's water supply. Hobart has a mild climate, and its attractions include its mountain, picturesque harbour, broad four-lane-bridged river, early colonial architecture, the Queen's Domain and nearby beaches.

Hobart City Council

The present council consists of 12 aldermen, including the Lord Mayor and Deputy; elections are held every two years when six aldermen retire. The Lord Mayor and Deputy Lord Mayor are elected by the ratepayers at each biennial election; only aldermen of two years, or more, service are entitled to stand for election to these two offices. Candidates do not stand for wards, and all ratepayers can vote for the filling of vacancies. The most recent elections were held in June 1966, 1968 and 1970. An amendment to the *Hobart Corporation Act* in 1967 required electors to vote for at least six candidates in choosing aldermen; previously an elector could cast a valid vote even if he only chose one candidate (although there were six vacancies to fill).

Historical Development

In 1846, Hobart was divided into five wards, each electing three commissioners to deal with lighting, draining and paving; an elected municipal council was established in 1852 and in 1857 Hobart Town was proclaimed a city. Its graceful Town Hall was completed in 1866. The city was enlarged by the absorption of Glebe Town, Mt Stuart, Wellington, Queenborough and New Town between 1907 and 1920. The number of aldermen was last varied in 1934 (to 12), the year in which the title Lord Mayor was bestowed by Royal Command.

Town of Devonport

Description

Devonport, situated at the mouth of the Mersey River estuary (some 60 miles north-west of Launceston) is a growing commercial centre and port for a rich agricultural district and a rapidly expanding industrial area. The town is the fourth largest centre of population in Tasmania and in the past 12 months has exhibited one of the highest population growth rates in the State. At the 1966 Census, the town had 14,874 inhabitants; by 1970, this had increased to an estimated 17,120 persons.

The cool temperate oceanic climate of Devonport, with an average annual rainfall of 37 inches, and an average temperature range of 45.8° F to 62.0° F, provides suitable conditions for the cultivation of a wide variety of crops.

As Devonport has excellent port facilities and a plentiful water supply together with low-cost electricity and the availability of suitable labour, a number of important industries have been attracted to the district. These

include food canning and processing, cement and asbestos production, carpet and textile manufacture, sawmilling, fine paper production and particle board manufacture.'

Primary products from the surrounding rich agricultural district include: apples and vegetables, particularly potatoes, peas and beans; fodder crops; dairy products; and meat slaughtering. Timber cutting for paper and particle board manufacture and for milling purposes is a major industry in the district. The Devonport district is the location for the State's newest primary production crop, oil poppies. A manufacturing plant has been established to process the poppies for pharmaceutical purposes.

In 1969-70, 450 ships visited the port, a decrease of 21 from the previous year, however, the cargo handled (458,746 tons) was an increase of about 55,000 tons. The importance of Devonport as a port is illustrated by the fact that the three Bass Strait vehicle ferries together provide a daily cargo service to Victoria and New South Wales. An additional roll-on roll-off berth has recently been constructed (at a cost of \$2.0 million) to handle mainly cargoes for the Wesley Vale plant of Associated Pulp and Paper Mills Ltd. This plant commenced production early in 1971. Devonport was Australia's first container port and the first to provide bulk handling and loading facilities for cement.

Tourism is of major importance to Devonport—thousands of visitors arrive and depart each year by the *Princess of Tasmania* and the *Australian Trader*. Consequently the town is a popular central point from which the many scenic attractions of the north-west may be visited. The Cradle Mountain-Lake St Clair National Park, fifty miles inland, possesses spectacular scenery and excellent bushwalking opportunities. Of particular interest is the \$104m Mersey-Forth hydro-electric scheme which harnesses the waters of four river systems by way of seven large dams and generating stations and three major tunnels.

The wide river estuary provides excellent facilities for water sports and several fine beaches are within close proximity. The Mersey Bluff, at the mouth of the Mersey River, with its park-like setting is ideal for swimming, surfing and camping.

Devonport Municipal Council

The Devonport Municipal Council (established 1908) consists of twelve members elected by rate-payers of the four municipal wards; each ward being represented by three councillors. Councillors are elected for a three-year term, one seat in each ward falling vacant every year. The Warden is elected by the Councillors.

The area of the Municipality is 27,970 acres. Small population centres outside urban Devonport include Quoiba, Spreyton, Forth, Leith, Don and Euganana.

Historical Development

The first historical reference to the site of present-day Devonport appeared in 1820 in a book by Lieut. Charles Jeffrey R.N. where it was stated that the 'Second Western River' was 21 miles west of Port Dalrymple (in the Tamar). The 'First Western River', also referred to by Jeffrey, was Port Sorell whereas later references to the Third and Fourth such rivers are taken to mean the Don and the Forth.

In 1826, the 'Second Western River' was renamed the Mersey by Mr Edward Curr, manager of the Van Diemen's Land Company which established two shipping depots in the estuary. The inlet at the mouth of the river was later named Port Frederick, after Governor Arthur's son, when the Governor visited the district in 1829.

In 1836, the county of Devon was proclaimed and its boundaries defined as extending from the Tamar River to the Emu River and from Bass Strait to the Meander River.

By the beginning of the 1840s, timber and palings were being shipped from the estuary to Launceston and to the South Australian copper mines (Burra and Kapunda). At the end of the decade a small village known as Frogmore existed near the present site of Latrobe. In 1844, a police hut was built on the eastern side of the Mersey Heads—two constables being stationed there to prevent runaway convicts leaving the colony by trading vessels.

The discovery of coal in 1851 started the real development of the estuary. Ships began coming into the Mersey in large numbers; on September 12, 1853, six vessels were seen loading in the river. By 1858, six jetties were in use and two more under construction. Over 1,000 tons of coal were being exported each month while considerable exports of timber were also recorded. The value of exports from the port for the half-year ending 1858 was £18,000.

During the 1850s, various small settlements sprang up in the vicinity of the estuary and by 1857, a population of 1,500 had settled around the district. At the mouth of the river, two separate townships, Torquay and Formby evolved.

At the beginning of 1850, the Torquay reserve was made on the eastern bank. The town was laid out in July 1851 and the first sales of land took place in Launceston three months later. The first Torquay settler was Mr Charles Oldaker (streets on both sides of the river bear his name). In 1852, the 'Devonshire Store' commenced trading and in 1853 a post office was opened as well as the 'Mersey', the town's first hotel.

On the western shore, a township reserve was proclaimed in May 1851, stretching as far as the Don River. In 1853, the laying out of the town began and the name of Formby was chosen. Soon after the auction of allotments in Launceston (1854) the town's first house was built by Mr Henry Morgan, a bricklayer. In 1855 the first store was erected and in 1857 the 'British Hotel' (later named the 'Formby') was opened. A passenger ferry operated between the two settlements from 1855 and in 1865 a vehicle punt was introduced.

Until 1873, Formby had no post office and all postal business was handled in Torquay, the latter being by far the more active settlement. In 1863, Torquay had a population of 180 persons while Formby, with only 62 inhabitants, was '...an inconspicuous settlement near the mouth of the river...'. Another settlement, known as Wenvoe, came into existence just south of Formby and was proclaimed a town in 1877. However, by the 1880s, the combined population of Formby and Wenvoe (244) was only two-thirds of that in Torquay (320).

The turning point in the history of Devonport occurred in 1885 with the extension of the railway line from Latrobe to Formby. Ships now traded with the settlements on the western bank as farm produce and other exports could be railled to the wharf. A massive building boom followed the coming of the railway reaching its peak in 1887 with the construction of many new business houses and residences. While Formby forged ahead, Torquay im-

mediately began to decline in importance, with all major business activities gradually being transferred to Formby. To improve port facilities, extensive dredging operations were undertaken and a light-house erected at the Bluff in 1889. The first bridge was constructed in 1901.

In 1888, Formby was proclaimed a town under the *Town Boards Act* 1884 and its boundaries altered to include Wenvoe.

The final stage in the formation of Devonport came in February 1890 when it was decided by public vote to amalgamate Formby and Torquay to form one town. The name Devonport was selected and in November of the same year, Parliament passed the *Devonport Corporation Bill* 1890. By 1895, town business had increased to such an extent that it was found necessary to engage a full-time town clerk and in 1899, the erection of a town hall, costing £1,200, was begun.

The estimated population at the turn of the century was 1,805—1,246 in West Devonport and 559 in East Devonport. In time, West Devonport became known simply as Devonport, with East Devonport occupying merely a suburban relationship (a far cry from the Torquay of earlier days).

Local Government—Present Organisation

Authority and Functions

The authority for, and the forms of, local government are prescribed entirely by State legislation which has largely been consolidated in the *Local Government Act* 1962. Hobart and Launceston cities operate under separate corporation Acts but the other authorities, including the City of Glenorchy, operate under the Act of 1962.

The functions of the municipalities are set out in broad general terms in Section 176 of the *Local Government Act* as:

‘A Municipality: (a) may for the welfare and good government of its district and the inhabitants thereof: (i) make by-laws; (ii) undertake, make and maintain works, buildings and services; and (iii) order and dispose the common affairs of its members; and (b) shall cause the Queen’s peace to be kept and maintained within its districts.’

Particular authority is given by Section 180 for a council clerk to be a Deputy Clerk of the Peace, Registrar of the Court of General Sessions and Clerk of Petty Sessions in his municipality.

In addition, by certain Acts, the municipalities are given specific responsibilities, e.g. *Health Act*, *Local Courts Act*, etc.

Administration of Justice

This responsibility of the municipality to administer the lower courts of justice is confined to Tasmania. It would appear to be a carry-over from the very early days of local government when the municipality was also required to provide the police force. In all other States the administration is in the hands of a State department. The practice here would now appear to be continued by reasons of expediency. (It should be noted that the process of removing this function from the municipalities has already commenced and the lower courts in the cities of Hobart and Glenorchy and the municipalities of Clarence and Kingborough are administered by the State. It should also be noted that where municipalities administer the courts, they receive all fines into their revenue and in some instances the council clerks receive additional salary for this court work.)

Electors

Persons eligible to vote in local government elections consist of owners or occupiers of rateable land and their spouses together with ex-servicemen, all of whom must be natural born or naturalised British subjects over the age of 21 years.

In Tasmania, a system of plural voting is employed in which the number of votes per elector is proportional to the assessed annual value of the particular property. Each spouse elector and ex-service elector has one vote.

South Australia and Western Australia also have plural voting for local government elections, while New South Wales, Victoria and Queensland employ the principle of a single vote per owner-occupier. In States with plural voting, entitlement scales are comparatively low (having been set many years ago) so that a majority of electors are actually entitled to the maximum number of votes.

An elector in Tasmania may exercise no more than four votes in any one municipal election except: (i) in the case of subdivided municipalities, where elections for each ward are treated as separate; and (ii) where he is voting on behalf of another person or organisation (e.g. a corporation, estate, absentee owner, convict, unnaturalised alien) in which case he may exercise up to twelve votes in each ward.

In no Australian State are unnaturalised aliens, who are owner-occupiers, eligible to vote at local government elections; Tasmania is the only State with a provision for aliens to have another person vote on their behalf.

Councillors

A councillor must be an elector of and either reside in, or carry on business in, the municipality and is subject to disqualification for certain breaches of conduct. The term of office is three years and one-third of the council retires each year. Councils may comprise six, nine, twelve or fifteen councillors. The Warden, Deputy Warden and Treasurer are elected by the Council members on an annual basis. (The electors of the City of Hobart elect the Lord Mayor and in Launceston and Glenorchy the electors elect the Mayor.) The office of Warden is comparable with that of the Mayor of a city or the President of a shire in other States.

Government Intervention

For any of a number of reasons, the Minister administering the *Local Government Act* may consider it necessary to recommend suspension of the elected councillors and the appointment of a commission, or in certain cases an administrator, to carry on municipal government in a particular municipality. In 1971, Clarence and Zeehan were administered by multi-member commissions. Commissioners and administrators are appointed by the Governor. Provision exists under the Act for the restoration of elected councils, subject to certain conditions being satisfied; this occurred during 1971 in Kingborough and St Leonards. In both municipalities nine-man councils were elected from three wards. The new councillors took office in May (St Leonards) and July (Kingborough).

Cities, Municipalities and Towns

In Tasmania there are only two categories of local government: a municipality or a city. The Act provides for the establishment of towns and indicates requirements before such towns are proclaimed but these are not municipal administrative units. Generally an area is proclaimed as a town to bring into

action certain provisions relating to rating and to building requirements. Before a municipality can petition for a town to become a city, the town must have had, for five years before the petition, a population of not less than 20,000.

Other than this population requirement for a city there are no provisions, such as exist in some of the other States and in Canada, for enlarging or diminishing the status of municipalities to accord with increasing or decreasing population.

Sources of Revenue

There are four main sources of local government revenue, namely rates, government grants, business undertakings and services. The rates are levied at so much in the dollar on the assessed annual value without any fixed maximum. Receipts from rates have not for sometime met the expense of the increasing range and cost of the services supplied. Government grants are a recognised means of increasing the revenue of municipalities.

The municipalities are unable to collect any rates for land owned by the Crown but where services are provided, the Crown does pay for such services. Grants and subsidies are made, generally speaking, to assist the municipalities to meet the overall costs of municipal government and sometimes the grant is made to assist in a particular project. Grants are sometimes made to induce the councils to provide or develop certain services and may also be made to assist in paying the costs of particular services shared by two or more adjoining municipalities. Earnings from business undertakings include charges for the supply of water and for the use of abattoirs. Some of these businesses show a small profit but, in most cases, the fees demanded are just sufficient to cover the cost of providing the services.

In the matter of water supply, where a number of local government areas could be served from a common source, the State Government did not consider a system of individual grants adequate and created two statutory authorities to act as 'wholesalers', the affected local government authorities acting as 'retailers'. This development is described later in the chapter under 'Water Supply and Sewerage'.

Municipal Commission

Provision was also made in the *Local Government Act* 1962 for the appointment of a commission, to be called the Municipal Commission. The Commission is a permanent body, whose members hold office for five years. The prime function of the Commission was to investigate the question of existing boundaries and municipal finances.

In October 1965, the Commission issued, in the one publication, seven reports containing, as principal recommendations, proposals for a reduction in the number of local government authorities from 49 to 20. Several municipal bodies appealed to the Supreme Court against the validity of the report and were given the right to appeal to the High Court of Australia. The High Court subsequently upheld the report's validity. However, since its election in 1969, the Bethune government has announced its intention to reconstitute the Commission with wider terms of reference.

For a more detailed account of the Report of the Municipal Commission, refer to the 1970 and earlier editions of the *Year Book*.

PLANNING AUTHORITIES

Town and Country Planning Commissioner's Office

Introduction

Before the Federal Labor Government took office in 1941, governments (both State and Commonwealth) had shown little interest in town planning legislation. The war-time Federal Labor Government encouraged activity in this field and in the period 1944-45 four States, including Tasmania, passed legislation with provisions largely based on existing British and New Zealand planning statutes.

Passed in 1944, the Tasmanian *Town and Country Planning Act* applied only to areas which were proclaimed as a result of municipal requests. The Act created the position of Town and Country Planning Commissioner and made him responsible to the Minister for Lands and Works; any decisions made by the Commissioner are subject to ministerial approval. In 1962, the *Town and Country Planning Act* was repealed and its provisions incorporated in *PART XVIII* of the *Local Government Act* 1962 under which the powers of the Commissioner were broadened so that, with the approval of the Minister he could require any municipality to prepare a planning scheme.

The Governor appoints the Commissioner for a period not exceeding five years but may terminate his appointment at any time. The Commissioner is also a member of the following bodies: the Municipal Commission; the Building Regulations and Nomenclature Boards; and the Co-ordination of Mapping Committee.

The Town and Country Planning Commissioner's office exercises statutory power in its own right but for administrative convenience it is regarded as a branch of the Public Works Department. The office consists of the Commissioner, the Deputy Commissioner (a position created in 1963) and a small staff. The Town and Country Planning Commissioner's office should not be confused with the Southern Metropolitan Master Planning Authority, described next in this chapter.

Functions

Briefly the function of the Commissioner is to approve municipal planning schemes and to certify that subdivision proposals are in accordance with the schemes and meet the other requirements as laid down in the *Local Government Act* 1962. Also the Commissioner may require: (i) any municipality to prepare a planning scheme; (ii) two or more municipalities to co-operate in the preparation of a master planning scheme; he is empowered to specify the completion date for such schemes. If the municipality fails to comply with the Commissioner's request, then the Commissioner may prepare a scheme, the municipality meeting all preparation costs. A municipality may voluntarily prepare a planning scheme and submit it to the Commissioner for approval. If a scheme prepared for an area to which a master plan applies is submitted to the Commissioner for approval then the Commissioner, before giving a decision, must consult the authority which prepared the master plan.

The Commissioner is also empowered to deal with objections to any planning scheme, including master plans prepared by a master planning authority.

In relation to non-rural subdivisions, the Commissioner's approval is required, all activities of this nature being subject to *PART XVIII* of the Act.

Scope of Plan

A town and country planning scheme may deal with the following planning matters: (i) all roads (public and private), streets, footpaths, building lines and land adjacent to foreshores; the plan should cover both alteration to existing roads, streets, etc. and proposed new roads, streets, etc.; (ii) positioning of buildings and the general nature and design of buildings; (iii) preservation of land for afforestation, recreation and public works; (iv) preservation of objects of historical or natural interest; (v) sewerage and drainage; (vi) lighting and water supply systems; (vii) specification of the use to which areas may be put; (viii) provision of amenities; (ix) stages of development; (x) ancillary or consequential works.

Southern Metropolitan Master Planning Authority*Introduction*

The Southern Metropolitan Master Planning Authority is responsible for planning the development of an area best defined broadly as a triangle based on Pontville (Brighton Municipality), Snug (Kingborough Municipality) and Seven Mile Beach (Clarence Municipality), which includes the Cities of Hobart and Glenorchy and also those parts of Brighton, Kingborough and Clarence Municipalities which are likely, in the future, to experience urban expansion because of their proximity to Hobart. The necessary legislation setting up the Southern Metropolitan Master Planning Authority was passed in 1957.

Representation and Finance

The *Local Government Act* 1962 prescribes that each city shall have the right to appoint three representatives and each municipality two representatives to the authority. The authority is empowered to make contracts, accept trusts of properties for town-planning purposes, make by-laws for domestic purposes and obtain a town-planning contribution based on the annual value of all rateable property.

Functions of the Authority

The main functions of the Authority are: (i) the technical and legal preparation of a master plan for the prescribed area (the detailed planning nevertheless remaining the responsibility of each constituent municipality or city); and (ii) the conduct of surveys and studies to facilitate the preparation of the master plan.

The Master Plan

The Master Plan 1962 was put up for statutory exhibition (for a compulsory period of three months). Following objections the Authority withdrew its Master Plan 1962 and the State Government decided to undertake a full transportation study, the results of which became available late in 1964. An interim 'Townplanning Policies Map 1964' was issued as a guide to member councils in their detailed planning and to other authorities concerned with development in the Southern Metropolitan Area while the Master Plan is being revised.

Tamar Regional Master Planning Authority

The Tamar Regional Master Planning Authority was established in September 1969, following a petition to the State Government by the City of Launceston and the Municipalities of Beaconsfield, George Town, Lilydale, Longford and St Leonards. Westbury and Evandale, two essentially rural municipalities, declined to join the Authority.

The Authority consists of three representatives from the Launceston City Council and two from each of the member municipalities. Financial support is given by the constituent councils, in proportion to the annual value of rateable municipal property.

The principal objective of the Authority is the unified promotion and development of the Tamar Valley region. A consortium of town planning consultants was engaged to produce a preliminary plan which was completed in mid-1971. This plan is now being developed into a statutory plan by the Authority's planning staff.

North West Master Planning Authority

In accordance with provisions of the *Local Government Act* 1962 the North West Master Planning Authority was constituted in February 1971. The member municipalities are Latrobe, Kentish, Devonport, Ulverstone, Penguin, Burnie and Wynyard, each of which has two representatives on the Authority.

The area over which the Authority has jurisdiction contains a population of about 76,500 mainly concentrated in the coastal strip between Devonport and Wynyard. Under the Local Government Act the Authority has the responsibility of preparing a master plan for the region to further the objective of guiding development along sound economic and environmental lines.

Finance for the Authority is obtained from member municipalities in proportion to the annual value of rateable property.

Transportation Studies

Hobart

The 1964 Hobart Area Transportation Study examined traffic problems in detail and brought to public attention the need for greatly increased expenditure in meeting these problems. The findings of the study were that metropolitan traffic would increase nearly 100 per cent during the 20 years following the survey and that a number of major new roads would be required.

During 1970-71, the Transportation Study was updated to make allowance for changes in traffic priorities since the 1964 investigation. A summary of the 1970 survey is included in Appendix B 'Later Information'.

Launceston

The realisation that existing traffic problems in the Launceston area would become more acute with the passage of time led to the undertaking of a traffic survey during 1967 which closely paralleled the Hobart study.

The purpose of the survey was to predict the transportation needs of urban Launceston some twenty years in the future and to determine what improvements to the existing transportation system would be appropriate to meet these needs.

Main proposals resulting from the survey were: a new bridge across the South Esk at Royal Park; a north-south Expressway along the east bank of the Tamar; a second Expressway, also running north to south, in the valley of the North Esk, curving westwards to the Bass Highway at Youngtown; and connecting roads (one-way in the central business district and two-way in the outer areas) between the major elements of the system.

FINANCE

Introduction

For many years, local government in Tasmania operated in 49 areas, comprising 47 municipalities and the cities of Hobart and Launceston. On 24 October 1964, a third city, Glenorchy, came into being and the number of municipalities fell to 46. There are no unincorporated areas.

Local government finance statistics in Tasmania are compiled by the Bureau of Census and Statistics from the following sources:

(i) *The 46 Municipalities*: each municipality is required to submit annually to the Auditor-General a 'Statement of Accounts' in pursuance of section 329 of the *Local Government Act* 1962; copies of these statements are made available to the Bureau. The 'Statements of Accounts' are compiled by the municipalities on a *cash receipts and payments* basis and two basic types of accounts are distinguished, namely revenue and loan accounts.

(ii) *The Cities*: the Cities of Hobart, Glenorchy and Launceston submit annually to the Auditor-General statements of accounts compiled on an *income and expenditure* basis but analysed on a cash receipts and payments basis. (Before 1970-71, Glenorchy submitted a municipal-type statement for analysis.)

The term 'local government' is employed only in relation to the municipalities and city corporations. Details of *semi-government* authorities concerned with water supply appear in the last section of this chapter; such authorities provide bulk water but reticulation and sale to householders remains a local government function. Since 1961, the Metropolitan Water Board has incurred loan debts which, under earlier arrangements, would have been entered as the water loan debts of Hobart, Glenorchy, Clarence and Kingborough local government authorities.

Value of Rateable Property

Revenue for local government authorities in Tasmania is derived principally from rates. Under the *Local Government Act* 1962, rates may be based on annual value (i.e. what it would bring annually if rented), unimproved value (i.e. value of land only), the capital value (i.e. value of land plus improvements) or finally upon a composite value incorporating the unimproved value plus some arbitrary proportion of the value of improvements.

In Tasmania, it has been usual for rates to be based on annual values despite isolated and unsuccessful campaigns in favour of taxing on unimproved value only. In estimating annual value, the valuer is taking into account not only the land but also the improvements (e.g. buildings) so there is, in actual fact, a close relation between total capital value of any property and its assessed annual value. The *Land Valuation Act* 1950 fixes a minimum relationship between annual value and capital value (four per cent) but sets no maximum.

The following table shows the total value of all rateable properties in the State and gives individual details for local government authorities with total capital value exceeding \$20m (there were eighteen in 1969-70).

Value of Rateable Properties: Tasmania and Principal Local Government Authorities
(\$ million)

Local Government Authority	Last Revaluation (a)	1967-68		1968-69		1969-70	
		Total Capital Value	Rateable Annual Value	Total Capital Value	Rateable Annual Value	Total Capital Value	Rateable Annual Value
Hobart (City) ..	1969	286.82	17.49	293.93	17.88	336.58	23.07
Launceston (City) ..	1970	144.42	11.41	146.81	11.57	148.61	11.75
Glenorchy (City) ..	1968	120.23	6.84	144.83	9.52	148.69	9.83
Clarence ..	1969	90.39	4.51	94.01	4.37	123.48	6.91
Devonport ..	1967	69.24	3.99	72.83	4.21	74.65	4.35
Burnie ..	1970	64.34	4.16	67.89	4.33	70.98	4.49
St Leonards ..	1971	39.77	2.47	42.10	2.60	42.90	2.81
Kingborough ..	1968	26.34	1.24	36.16	1.84	37.10	1.89
New Norfolk ..	1971	32.27	1.32	33.22	1.38	39.70	1.57
Circular Head ..	1968	23.69	1.07	32.38	1.56	32.97	1.59
Ulverstone ..	1969	29.78	1.56	30.72	1.61	38.81	2.19
Beaconsfield ..	1969	28.55	1.66	29.84	1.72	37.17	2.22
Wynyard ..	1967	27.78	1.50	28.90	1.56	30.06	1.61
Westbury ..	1968	18.07	0.75	23.81	1.07	24.03	1.08
George Town ..	1967	21.86	1.36	22.53	1.42	23.85	1.48
Longford ..	1969	21.33	1.03	21.41	1.04	27.23	1.31
Deloraine ..	1971	19.57	0.86	20.21	0.96	20.25	0.90
Lilydale ..	1971	19.37	1.15	20.00	1.17	20.94	1.24
Remaining Municipalities ..	..	275.75	12.40	300.52	13.51	310.84	14.10
Total Tasmania ..	..	1,359.60	76.76	1,462.12	83.30	1,588.84	94.39

(a) Effective from 1 July of year shown.

System of Valuation

The valuation of property is carried out by a State Government authority, the Land Valuation Branch; its valuations form the basis for two distinct taxes: (i) land tax collected by the State on the basis of unimproved land values; (ii) rates collected by local government authorities on the basis of assessed annual values. Since it is impossible to value all the properties within the State in the course of a single year, valuation is carried out on a rotational basis, e.g. Clarence valued in 1964 and again 1969; Hobart valued in 1963 and again in 1969.

The table that follows shows the total value of rateable property in Tasmania over the last ten years:

Total Rateable Property Valuation in all Local Government Areas
(\$ million)

Year	Unimproved Value	Value of Improvements	Capital Value	Year	Unimproved Value	Value of Improvements	Capital Value
1960-61 ..	186.0	622.2	808.2	1965-66 ..	317.7	893.4	1,211.1
1961-62 ..	193.6	676.5	870.1	1966-67 ..	329.1	948.7	1,277.8
1962-63 ..	216.1	726.8	942.9	1967-68 ..	351.7	1,007.9	1,359.6
1963-64 ..	271.6	803.5	1,075.1	1968-69 ..	375.0	1,087.1	1,462.1
1964-65 ..	290.5	849.9	1,140.4	1969-70 ..	412.7	1,176.1	1,588.8

In the period covered by the table (1960-61 to 1969-70), the following increases have been recorded: (i) in unimproved value, 122 per cent; (ii) in value of improvements, 89 per cent; (iii) in capital value, 97 per cent.

Total Receipts and Payments

As was indicated in the 1971 *Year Book*, an amended system of analysis of local government accounts was being introduced. All figures back to the financial year 1965-66 have been revised in accordance with this system. Figures from 1965-66 onwards are not strictly comparable with those for earlier years.

The following table shows total receipts and payments of the Tasmanian municipalities and cities:

Local Government Authorities
Total Receipts and Payments—All Funds
(\$'000)

Year	Open- ing Bal- ance (a)	Receipts				Payments			Surplus (+) or Deficit (-)
		Loan Accounts (b)	Revenue Accounts (c)	Special Accounts (d)	Total	Loan Accounts	Revenue Accounts (e)	Total	
1959-60	1,989	5,308	9,782	+ 3	15,093	4,670	9,762	14,432	+ 661
1960-61	2,650	5,420	10,868	-155	16,133	5,260	10,924	16,184	- 51
1961-62	2,599	6,447	12,098	+ 39	18,584	5,658	11,778	17,436	+ 1,148
1962-63	3,747	6,873	13,764	+690	21,327	7,212	13,256	20,468	+ 859
1963-64	4,606	7,268	14,792	+242	22,302	7,431	14,654	22,085	+217
1964-65	4,823	7,273	16,250	..	23,522	6,354	16,176	22,530	+993
1965-66 ^r	5,819	7,527	18,187	..	25,715	8,301	17,863	26,164	-457
1966-67 ^r	5,374	7,595	20,122	..	27,717	8,044	19,563	27,607	+106
1967-68 ^r	5,486	9,611	21,708	..	31,320	9,325	20,942	30,267	+1,053
1968-69 ^r	6,539	8,682	23,959	..	32,641	8,634	23,249	31,883	+758
1969-70	7,297	7,469	25,914	..	33,383	7,972	24,816	32,788	+595

(a) Bank balances (less unrepresented cheques), securities and cash on hand.

(b) Includes loan raisings, sales, capital grants received, etc.

(c) From 1965-66, grants from the Metropolitan Water Board to cover working expenses have been included in the total and not off-set against payments.

(d) From 1964-65, these accounts are analysed and included under 'loan' or 'revenue'.

Business Undertakings

In the analysis of the local government authority accounts a distinction is drawn between 'ordinary services' and 'business undertakings'.

The classification 'business undertaking' is used in Australian local government finance statistics to include municipal tram and bus services, municipal electricity supply (generation or distribution), municipal water and sewerage schemes, municipal abattoirs, etc. In Tasmanian local government finance statistics, electricity supply ceased to appear as from 1948-49 (the Hydro-Electric Commission is now the sole supplier). Municipal tram and bus services ceased to appear as an item in 1955-56, the Metropolitan Transport Trust having acquired the city transport services operating in Hobart and Launceston. Consequently, the only activities under the heading of municipal 'business undertakings' in current Tasmanian statistics relate to water supply, sewerage and abattoirs.

Rate Collections

There is considerable diversity in the types of rate imposed by individual local government authorities. In Hobart, virtually all properties are subject to the one consolidated rate and a similar position exists in Launceston; in most municipalities, however, the property holder, after being charged the basic general, road, light and health rates, is subject also to additional rates assessed according to the location of the property and the nature of the services provided (e.g. a fire brigade rate for properties which are close enough for fire brigade protection, a water rate where the service is available). Property holders in a particular district may be called upon to pay a special rate for an improvement peculiar to that area (e.g. a reserves and recreation rate to finance a sports ground or a garbage rate to finance a disposal service).

The following table shows details of the rates collected in Tasmania during a three-year period:

Rates Received (a) by Local Government Authorities
(£'000)

Particulars	1967-68 <i>r</i>	1968-69 <i>r</i>	1969-70
Ordinary Rates (b)—			
General (b)	4,534	4,898	5,047
Light	226	232	254
Road	3,378	3,647	4,013
Health	297	324	354
Sanitary and Garbage	229	252	247
Reserves and Recreation	632	720	832
Halls	76	80	85
Library	100	119	144
Fire Brigade	81	122	145
Drainage	70	92	104
Other	16	25	57
Total	9,639	10,510	11,282
Business Undertakings' Rates—			
Water	2,958	3,413	3,613
Sewerage	1,774	1,983	2,287
Total	4,732	5,395	5,899
Grand Total	14,371	15,905	17,181

(a) Net of refunds.

(b) Where a single consolidated rate has been charged (e.g. Hobart and Launceston), the collection has been dissected between 'ordinary' and the two 'business undertakings' components but the 'ordinary' component has been entered, without further analysis, as 'general'.

Revenue of Local Government Authorities

The biggest proportion of local government revenue comes from rates (66 per cent in 1969-70) and these are a direct charge on owners of property.

After rates, the next most important sources of revenue are: (i) Government and semi-government grants; and (ii) charges for public works and services. The next table shows, for a three-year period, the total annual revenue receipts, according to source, of all municipalities and cities:

Local Government Authorities
Revenue Fund Receipts, Ordinary Services and Business Undertakings,
Classified According to Source
(\$'000)

Source of Receipts	1967-68 <i>r</i>	1968-69 <i>r</i>	1969-70
Ordinary Services—			
Rates	9,639	10,510	11,282
Licences	147	169	180
Total	9,786	10,679	11,463
Public Works and Services—			
Health	53	61	59
Sanitary, Garbage and Street Cleaning	16	17	19
Recreational Facilities	316	350	415
Halls and Community Centres	64	65	71
Council Residences	65	65	83
Cemeteries and Crematoria	106	126	142
Roads	132	100	124
Parking	413	480	563
Private Works	314	345	375
Plant Sales	25	49	41
Other	757	686	864
Total	2,261	2,345	2,753
Government and Semi-Government Grants—			
Roads	1,592	1,544	1,600
Other	218	286	272
Total	1,809	1,829	1,872
Other Receipts (a)	668	773	862
Total Ordinary Services	14,524	15,626	16,949
Business Undertakings—			
Water Supply—			
Rates	2,958	3,413	3,613
Government and Semi-Government Grants	1,149	1,361	1,345
Other	510	545	550
Total	4,616	5,319	5,508
Sewerage—			
Rates	1,774	1,983	2,287
Government and Semi-Government Grants	90	114	156
Other	152	165	207
Total	2,016	2,263	2,649
Abattoirs—			
Other	552	750	808
Total Business Undertakings	7,184	8,333	8,965
Grand Total	21,708	23,959	25,914

(a) Includes additions to sinking funds, interest earnings, net deposits, donations and tolls.

Revenue Receipts Summary

The preceding table, does not show total figures for all rates and government grants; totals for these items, are included in the summary which follows:

Revenue Fund Receipts, Ordinary Services and Business Undertakings
(\$'000)

Year	All Rates (net)	Licences	Total Govt and Semi-Govt Grants (a)	Business Undertakings (b)	Ordinary Municipal Services	Other Receipts	Total Receipts
1964-65	10,380	87	2,462	1,153	1,679	489	16,250
1965-66 ^r	11,512	114	2,818	931	2,158	654	18,187
1966-67 ^r	12,855	134	3,024	1,086	2,161	858	20,119
1967-68 ^r	14,371	147	3,049	1,213	2,261	668	21,708
1968-69 ^r	15,905	169	3,305	1,460	2,345	773	23,959
1969-70	17,181	180	3,372	1,566	2,753	862	25,914

(a) Before 1965-66 refunds from the State Government were included in this item; from 1965-66 they are allocated under the next three headings.

(b) Excludes rates and grants which are shown separately.

Revenue Payments by Local Government Authorities

The following table shows annual payments by local government authorities from revenue funds:

Local Government Authorities
Revenue Fund Payments, Ordinary Services and Business Undertakings,
Classified According to Service
(\$'000)

Payments for	1967-68 <i>r</i>	1968-69 <i>r</i>	1969-70
Ordinary Services—			
General Administration	1,753	1,968	2,217
Loan Charges—Interest	1,478	1,677	1,875
Redemption	1,257	1,413	1,610
Sinking Fund Contributions (a)	160	168	173
Total	2,896	3,258	3,658
Public Works and Services—			
Road, Street and Bridge Construction	4,687	4,784	4,850
Other Road Services (b)	—8	—92	—154
Drainage	75	64	95
Health	349	425	395
Sanitary, Garbage and Street Cleaning	621	636	641
Recreational Facilities	1,081	1,189	1,279
Halls and Community Centres	171	203	220
Libraries	87	96	116
Fire Brigades	74	86	140
Street Lighting	285	361	387
Cemeteries and Crematoria	124	147	158
Private Works	188	232	254
Parking	230	237	281
Hotmix and Asphalt Plant	219	189	225
Other Services	547	623	553
Total	8,729	9,179	9,439
Grants	461	582	631
Other Payments	—78	63	132
Total Ordinary Services ..	13,761	15,049	16,077

Local Government Authorities
Revenue Fund Payments, Ordinary Services and Business Undertakings,
Classified According to Service—continued
(\$'000)

Payments for	1967-68 <i>r</i>	1968-69 <i>r</i>	1969-70
Business Undertakings—			
Water Supply—			
Loan Charges—Interest	782	816	828
Redemption	543	609	613
Sinking Fund Contributions (a)	24	25	25
Total	1,349	1,451	1,466
Other Payments (c)	3,303	3,794	4,050
Total Water Supply	4,652	5,244	5,516
Sewerage—			
Loan Charges—Interest	853	968	1,105
Redemption	411	473	539
Sinking Fund Contributions (a)	40	41	43
Total	1,304	1,482	1,687
Other Payments (d)	709	841	975
Total Sewerage	2,013	2,323	2,662
Abattoirs—			
Loan Charges—Interest	45	50	49
Redemption	24	124	27
Sinking Fund Contributions (a)	8	9	10
Total	77	183	86
Other Payments (d)	438	449	475
* Total Abattoirs	515	632	561
Total Business Undertakings	7,181	8,200	8,739
Grand Total Payments ..	20,942	23,249	24,816

(a) Excludes interest earnings on sinking funds.

(b) Net plant working (plant maintenance and operating expenses *less* hire charged to plant working accounts *plus* plant purchase (\$666,000 in 1969-70)).

(c) Comprises grants paid to semi-government authorities (principally the Metropolitan Water Board), working expenses, capital expenditure out of reserve fund and sundry payments.

(d) Comprises working expenses, capital expenditure out of revenue fund and sundry payments.

Business Undertakings

The Beaconsfield municipality is served by the West Tamar Water Supply Scheme, which the municipality maintains and manages as agent for the Rivers and Water Supply Commission. All debt in the municipality in respect of water supply became the responsibility of the Commission on 1 July 1960; interest and principal repayments to the Commission on loans raised for the purpose of this water have been included in 'Water Supply—Other Payments' in the previous table.

Launceston, Burnie, Devonport and Campbell Town operate municipal abattoirs; other abattoirs in Tasmania are commercially operated concerns.

Payments, Summary

Details of loan charges, ordinary services and business undertakings appear below:

**Payments, Ordinary Services and Business Undertakings
(\$'000)**

Year	Adminis- tration (a)	Loan Charges		Ordinary Services (c)		Business Undertak- ings (c)	Total
		Interest (b)	Redemp- tion	Roads, Streets, Bridges	Other		
1959-60 ..	885	1,095	1,000	2,914	2,168	1,700	9,762
1960-61 ..	882	1,247	1,137	3,350	2,396	1,910	10,924
1961-62 ..	921	1,471	1,255	3,620	2,404	2,106	11,778
1962-63 ..	992	1,853	1,421	3,990	2,948	2,053	13,256
1963-64 ..	1,190	2,019	1,631	4,160	3,236	2,419	14,654
1964-65 ..	1,383	2,167	1,897	4,027	3,741	2,697	(d) 16,176
1965-66 r ..	1,392	2,574	2,009	4,205	3,913	3,568	17,863
1966-67 r ..	1,558	2,815	2,188	4,224	4,561	4,001	19,563
1967-68 r ..	1,753	3,159	2,235	4,687	4,425	4,450	20,942
1968-69 r ..	1,968	3,512	2,619	4,784	5,039	5,084	23,249
1969-70 ..	2,217	3,858	2,789	4,850	5,353	5,500	24,816

(a) Administration charged to ordinary services only; includes interest on bank overdraft.

(b) Excludes interest on bank overdraft.

(c) Excludes loan charges i.e. loan interest, redemption and sinking fund contributions.

(d) Includes sinking fund contributions not specified in the table: 1964-65, \$263,000; 1965-66, \$202,000; 1966-67, \$218,000; 1967-68, \$233,000; 1968-69, \$243,000; 1969-70, \$250,000.

Loan Receipts

At 30 June 1970 the aggregate loan debt of all local government authorities was \$71,853,000, of which only \$934,000 (i.e. 1.3 per cent) was in respect of debt due to the State Government. The principal Tasmanian sources of loans for local government authorities are banks, superannuation and various trust funds, insurance companies, and for cities, public issues. The amount that any local government authority can raise is governed by: (i) the difficulty in finding willing lenders; (ii) the fact that the approval of the State Treasury is required; and (iii) under the *Local Government Act 1962*, total loan indebtedness is strictly controlled and cannot exceed a predetermined figure based on annual income for the preceding three years.

The following table shows, for a three-year period, the receipts of the loan accounts of all local government authorities:

**Local Government Authorities: Receipts to Loan Account
(\$'000)**

Particulars	1967-68 r	1968-69 r	1969-70
Loan Raisings for—			
Sewerage	2,893	2,671	2,004
Road, Street and Bridge Construction ..	1,576	1,856	1,781
Water Supply	1,174	666	700
Recreational Facilities	649	530	578
Other	1,864	1,910	1,731
Total Raisings	8,157	7,633	6,794
Government and Semi-Government Grants ..	1,130	697	418
Other Receipts (a)	322	350	258
Total Receipts	9,611	8,682	7,469

(a) Includes recoveries of capital expenditure, sales of materials credited to loan funds, donations from the private sector credited to loan funds, etc.

Loan Payments and Loan Debt

The next table shows, for a five-year period, details of payments from the loan accounts of all local government authorities.

**Local Government Authorities: Payments from Loan Accounts
Classified According to Purpose
(\$'000)**

Purpose	1965-66	1966-67	1967-68	1968-69	1969-70
Water	1,947	1,612	2,160	1,227	1,108
Sewerage	2,589	2,476	2,786	2,598	2,535
Drainage	183	248	268	359	371
Road, Street and Bridge Construction	1,662	1,962	1,904	2,048	2,046
Recreational Facilities	645	586	622	653	590
Halls and Community Centres	65	66	180	202	220
Other	1,210	1,095	1,405	1,548	1,101
Total	8,301	8,044	9,325	8,634	7,972

Loan Summary

The following table shows, in summary form, loan raisings, loan debt and sinking funds:

**Local Government Authorities: Loan Raisings, Loan Debt and Sinking Funds
(\$'000)**

Year	Loan Raisings During Financial Year			Loan Debt at 30 June			Total of Sinking Funds at 30 June (c)
	From State Government (a)	From Other Sources (b)	Total	To State Government	To Other Creditors	Total	
1959-60 ..	138	5,094	5,232	268	26,876	27,144	422
1960-61 ..	269	5,010	5,279	524	29,906	30,429	473
1961-62 ..	301	5,863	6,164	808	34,543	35,351	561
1962-63 ..	116	5,209	5,325	853	38,173	39,026	662
1963-64 ..	165	5,681	5,846	990	42,279	43,269	817
1964-65 ..	9	6,228	6,237	932	46,665	47,597	849
1965-66 ..	82	6,430	6,512	977	51,119	52,096	991
1966-67 ..	21	6,960	6,981	907	55,980	56,888	1,206
1967-68 ..	79	8,104	8,183	917	61,903	62,821	1,496
1968-69 ..	35	7,599	7,633	917	66,922	67,839	1,706
1969-70 ..	44	6,751	6,795	934	70,918	71,854	1,893

(a) These advances were from the State Treasury direct, and exclude those from authorities such as the Housing Department and the Metropolitan Transport Trust.

(b) Includes advances from the Housing Department and the Metropolitan Transport Trust.

(c) Sinking funds maintained by municipalities and cities for debt redemption purposes.

Source of Loan Funds

It can be seen from the preceding table that the local government loan debt includes only a small liability in respect of advances made by the State Treasury. The proportion of total debt now owed to State authorities (but not directly to the Treasury) has increased somewhat, principally due to co-operation between individual municipalities and the State Housing Department. In

planning the establishment of large housing estates, the Housing Department has been concerned with the provision of certain essential services (e.g. water and sewerage); where such services have required capital expenditure by a municipality, the Department has made some loan funds available.

Instalment Debentures

Much of the debt of the municipalities is in the form of instalment debentures which involve equal periodic payments (usually yearly or half-yearly); such payments are credited to redemption and interest in changing proportions, the accounting being the same as used to record home instalment purchase transactions.

Financial Statistics of Individual Local Government Authorities

In this chapter, local government finance statistics are presented, in the main, only in total; similar detailed statistics for individual authorities may be found in the Bureau's Tasmanian Office annual *Finance* bulletin. The following table shows, for each local government authority: (i) rates received; (ii) payments from loan and revenue accounts; (iii) balance of funds; (iv) loan debts.

Individual Local Government Authorities: Financial Summary, 1969-70
(\$'000)

Local Government Authority	Total Rates and Licences Received (Net)	Payments		Funds at 30-6-70 (a)	Loan Debt at 30-6-70
		Loan Accounts	Revenue Accounts		
Beaconsfield	(b) 439.2	208.3	516.3	-8.7	1,349.7
Bothwell	43.8	..	91.6	-9.7	29.6
Brighton	61.8	4.2	126.0	82.1	123.5
Bruny	16.4	7.5	48.9	8.7	14.6
Burnie	1,084.1	819.4	1,272.7	707.1	4,664.3
Campbell Town	88.5	10.3	127.1	49.8	278.0
Circular Head	293.4	56.7	350.5	162.5	449.0
Clarence	1,794.5	919.2	1,970.8	72.8	6,412.9
Deloraine	130.3	17.6	209.4	41.8	269.5
Devonport	970.8	755.2	1,137.6	125.5	5,145.7
Esperance	137.0	27.2	145.6	35.2	432.5
Evandale	69.7	..	112.5	39.5	115.5
Fingal	104.2	1.2	177.4	43.3	275.9
Flinders	67.2	14.6	181.0	25.4	161.5
George Town	284.8	140.5	320.6	50.3	1,079.9
Glamorgan	69.9	53.0	86.5	30.5	331.2
Glenorchy (City)	2,136.4	711.1	2,354.4	252.7	7,623.8
Gormanston	15.8	..	18.9	6.2	0.1
Green Ponds	31.6	13.0	65.7	1.7	51.4
Hamilton	66.2	16.2	136.1	9.4	129.1
Hobart (City)	3,550.3	1,020.6	5,130.0	2,807.5	15,505.8
Huon	135.8	51.7	238.8	34.3	435.8
Kentish	124.7	69.7	208.1	60.6	428.1
Kingborough	415.8	326.4	673.2	94.5	2,112.0
King Island	108.9	13.5	164.9	76.5	340.3
Latrobe	180.4	43.2	258.9	34.7	717.6
Launceston (City)	2,320.8	679.1	3,735.2	2,434.5	8,768.4
Lilydale	227.6	53.1	318.0	126.0	863.5
Longford	197.6	174.0	299.7	64.8	1,095.7
New Norfolk	270.2	103.3	358.3	182.9	849.7
Oatlands	95.9	4.6	154.7	52.3	170.7
Penguin	144.5	94.4	200.6	42.6	523.4
Port Cygnet	80.6	1.4	125.7	33.7	204.6
Portland	67.3	48.8	117.8	37.3	284.3

Individual Local Government Authorities: Financial Summary, 1969-70—continued
(\$'000)

Local Government Authority	Total Rates and Licences Received (Net)	Payments		Funds at 30-6-70 (a)	Loan Debt at 30-6-70
		Loan Accounts	Revenue Accounts		
Queenstown	143.1	..	170.3	49.3	108.4
Richmond	62.1	11.5	139.8	— 2.7	193.1
Ringarooma	80.4	1.0	115.0	30.6	95.0
Ross	31.2	2.7	65.7	22.8	25.0
St Leonards	612.3	243.1	732.3	129.3	2,919.9
Scottsdale	119.0	296.4	200.2	—64.7	581.3
Sorell	152.8	207.0	303.3	12.9	819.7
Spring Bay	50.6	34.1	71.1	37.1	139.0
Strahan	17.3	8.0	40.1	—12.1	134.5
Tasman	25.5	7.3	47.0	6.2	30.5
Ulverstone	383.3	180.7	578.5	92.9	2,640.8
Waratah	35.2	21.2	51.9	8.8	46.0
Westbury	163.4	13.2	193.2	31.7	375.3
Wynyard	416.2	339.1	496.5	192.7	1,918.8
Zeehan	145.2	147.7	177.7	51.6	589.3
Total	17,361.3	7,971.7	24,816.1	8,394.8	71,853.7

(a) Value of bank balances (less unrepresented cheques), securities and cash on hand.

(b) Includes water rates of \$114,000 collected by the Beaconsfield Council on behalf of the Rivers and Water Supply Commission.

Revenue Raising

The very wide range in the individual capacity of each of the 49 local government authorities to raise revenue, using boundaries which in many cases date back to 1906, was one of the factors advanced by the Municipal Commission when it made its 1965 report; amalgamation of existing authorities into larger units was seen as a method of solving this problem.

Employees of Local Government Authorities

The following table shows employees of local government authorities at 30 June 1970; the twelve authorities specified in descending order are those employing 40 or more persons. The number of employees of individual authorities ranges from over 550 persons (Hobart) to as low as two persons.

Local Government Authorities: Persons Employed by Main Authorities
at 30 June 1970 (a)

Local Government Authority	General Administration		All Other Services		Total		
	Males	Females	Males	Females	Males	Females	Persons
Hobart (City)	131	37	378	6	509	43	552
Launceston (City) ..	85	31	336	22	421	53	474
Clarence	41	13	133	12	174	25	199
Glenorchy (City) ..	49	16	125	3	174	19	193
Devonport	25	15	145	4	170	19	189
Burnie	25	8	125	2	150	10	160
St Leonards	10	7	56	..	66	7	73
Kingborough	18	14	37	1	55	15	70
Ulverstone	10	6	43	2	53	8	61
Wynyard	7	4	41	..	48	4	52
Beaconsfield	6	5	32	2	38	7	45
New Norfolk	5	2	37	1	42	3	45
Other Municipalities ..	87	44	397	3	484	47	531
Total	499	202	1,885	58	2,384	260	2,644

(a) Includes permanent and temporary employees but excludes part-time employees.

The next table shows total employees of local government authorities over a five-year period:

Local Government Authorities: Persons Employed (a) at 30 June

Particulars	1966	1967	1968	1969 <i>r</i>	1970
General Administration—					
Males	451	485	486	503	499
Females	177	195	192	188	202
Persons	628	680	678	691	701
All Other Services—					
Males	1,749	1,777	1,824	1,813	1,885
Females	45	43	59	62	58
Persons	1,794	1,820	1,883	1,875	1,943
Total—					
Males	2,200	2,262	2,310	2,316	2,384
Females	222	238	251	250	260
Persons	2,422	2,500	2,561	2,566	2,644

(a) Includes permanent and temporary employees but excludes part-time employees.

WATER SUPPLY AND SEWERAGE

Introduction

Water supply and sewerage were once exclusively the responsibility of the cities and municipalities; two semi-government authorities now operate bulk supply schemes, piping water for distribution by the local government authorities in the Hobart and Launceston areas, and directly to certain industrial consumers.

Metropolitan Water Board

The overall control of water supply in Hobart, Clarence, Glenorchy and Kingborough is vested in the Metropolitan Water Board but the four local government authorities retain primary responsibility for reticulation and sale to consumers. The Board has constructed a large pumping station at Bryn Estyn on the Derwent, pipeline capacity being 20m gallons per day. Before the Board came into operation in 1962, the four metropolitan local government authorities had their own supply schemes (e.g. Hobart supplied from Lake Fenton and Mount Wellington); these schemes still operate but the Board's pumping works based on the Derwent now give an assured supply.

The Board also controls the Southern Regional Water Supply Scheme drawing water from the Derwent and originally constructed to supply Hobart's eastern shore suburbs (reticulation is however still the responsibility of the local government authorities). On the eastern shore, the Board has now extended its service to the towns of Cambridge, Midway Point, Sorell, Seven Mile Beach, Lauderdale and Rokeby, while western shore extensions serve Margate, Snug and Howden.

Under the *Metropolitan Water Board Act* 1961, the four metropolitan local government authorities no longer borrow money for metropolitan water works, the Board now provides them with the necessary capital in the form of

grants; the local authorities in turn being required to make revenue contributions to the Board. The effect of this arrangement can be seen in State local government loan debt tables where the debt in respect of water shows only very minor annual increases; in effect, the expenditure of the four metropolitan municipalities for water works undertaken since 1961 is reflected in the debt of the Board and not in debt of the municipalities. At 30 June 1970, the loan debt of the Board to the State Treasury was \$15.35m and, to other lenders, \$3.86m.

Financial Relationship

The relations between the Board and the four metropolitan local government authorities are summarised in the following table:

Metropolitan Water Board: Income and Expenditure
(£'000)

Particulars	1967-68	1968-69	1969-70
INCOME			
Municipal Contributions—			
Hobart	536	710	735
Glenorchy	393	496	486
Clarence	448	555	524
Kingborough	76	94	90
Special Consumers	221	256	315
Direct Earnings, Southern Regional Scheme ..	173	194	232
Other Revenue	8	12	23
Total	1,855	2,316	2,406
EXPENDITURE			
Reimbursement of Working Expenses—			
Hobart	314	313	327
Glenorchy	216	217	238
Clarence	130	133	137
Kingborough	37	38	43
Bulk Supply, Operation Costs	268	r 329	322
Administrative Expenses	34	52	54
Interest	666	r 801	928
Depreciation	186	220	250
Investigation Expenses Written-Off .. .. .	..	..	39
Total	1,850	2,101	2,339

The payments to Hobart, Glenorchy, Clarence and Kingborough by the Board shown in the preceding table do not include its capital contributions to these authorities.

From 1 July 1962 the Board has made capital contributions to the four local government authorities for: (i) construction and improvement of their water works; and (ii) redemption of their water debt raised prior to creation of the Board. The Board finances these capital contributions by: (i) borrowing from the State Government; (ii) borrowing from the public; and (iii) application of internal funds, e.g. depreciation funds. The next table shows capital contributions paid by the Board to the four local government authorities:

Metropolitan Water Board: Contributions to Southern Local Government Authorities
(£'000)

Particulars	1967-68	1968-69	1969-70
Hobart—			
Construction and Improvement	636	299	161
Redemption and Conversion.. ..	30	29	116
Total	666	328	276
Glenorchy—			
Construction and Improvement	366	170	129
Redemption and Conversion.. ..	87	75	55
Total	453	245	184
Clarence—			
Construction and Improvement	72	82	30
Redemption and Conversion.. ..	31	41	55
Total	103	123	85
Kingborough—			
Construction and Improvement	12	52	19
Redemption and Conversion.. ..	11	11	12
Total	23	63	31
Total—			
Construction and Improvement ..	1,087	602	339
Redemption and Conversion ..	160	155	237
Grand Total	1,247	757	576

Capital Expenditure

Capital expenditure (including capital contributions to the four local government authorities) during 1969-70 amounted to \$1.07m of which \$0.16m was spent on extensions to the Bryn Estyn (near Hayes) treatment plant. These extensions were completed early in 1971 at a total cost of approximately \$0.7m and the plant's capacity was increased to 20 million gallons of fully treated water per day. A further \$94,000 was spent on the Mornington Reservoir which serves the developing Housing Department estate.

Municipal Waterworks and Sewerage Schemes

At 30 June 1970 water was supplied to approximately 112,000 properties which consumed almost 16,000m gallons during the year. In 1969-70, the receipts of all local government authorities for water supply totalled \$5.51m, their loan debt for construction purposes at 30 June 1970 standing at \$15.02m.

At 30 June 1970 sewerage services were connected to approximately 80,400 tenements of which about 58 per cent were connected to sewerage treatment plants. In 1969-70, the receipts of all local government authorities for sewerage services were \$2.65m, their loan debt for construction standing at \$21.02m.

The following table gives details of the number of properties served by municipal water and sewerage schemes, and the receipts and payments in respect of these schemes:

**Municipal Water and Sewerage Schemes (a): Properties Served and
Receipts and Payments, 1969-70**

Municipality	Water Supply				Sewerage			
	Properties Served (b) (No.)	Revenue Receipts (\$'000)	Revenue Payments (\$'000)	Loan Fund Payments (\$'000)	Properties Served (b) (No.)	Revenue Receipts (\$'000)	Revenue Payments (\$'000)	Loan Fund Payments (\$'000)
Beaconsfield (c)	4,513	148	161	..	2,093	67	66	133
Bothwell ..	235	5	5	..	..	..	..	..
Brighton ..	365	16	14	..	..	..	..	..
Burnie ..	4,700	222	226	135	4,500	154	159	163
Campbell Town	543	9	8	..	299	17	17	1
Circular Head	1,639	51	47	4	182	9	9	15
Clarence ..	9,065	752	729	44	5,659	286	278	399
Deloraine ..	940	27	28	12	..	..	..	..
Devonport ..	6,500	253	267	172	5,500	110	118	152
Esperance ..	1,090	29	28	17	262	15	14	4
Evandale ..	490	13	16	..	..	..	..	..
Fingal ..	1,095	36	34	1	..	..	..	..
Flinders ..	81	8	7	14	..	..	..	..
George Town	1,421	73	78	3	1,100	45	45	19
Glamorgan ..	970	24	21	47	..	..	..	..
Glenorchy ..	14,700	799	797	105	12,987	428	425	273
Gormanston..	270	2	2	..	..	..	..	..
Green Ponds	109	5	5	..	..	..	..	..
Hamilton ..	147	6	10	..	..	..	..	..
Hobart ..	16,404	1,243	1,243	161	15,561	334	329	126
Huon ..	2,320	25	27	22	296	17	18	6
Kentish ..	590	29	30	27	273	15	14	36
Kingborough	2,564	202	204	33	1,366	75	91	73
King Island ..	257	16	15	5	204	12	12	2
Latrobe ..	1,117	34	36	2	725	41	41	1
Launceston ..	14,772	523	507	48	14,329	422	434	85
Lilydale ..	1,794	80	80	29	1,434	46	41	2
Longford ..	1,100	36	35	2	420	36	43	127
New Norfolk	2,004	52	58	3	1,696	36	35	62
Oatlands ..	474	15	16	..	..	..	..	..
Penguin ..	1,015	31	31	6	501	16	15	19
Port Cygnet ..	410	15	16	..	242	4	4	..
Portland ..	504	27	28	44	193	4	4	..
Queenstown..	1,590	27	25	..	1,532	9	8	..
Richmond ..	289	15	15	..	..	..	..	..
Ringarooma..	586	16	17	..	..	..	..	..
Ross ..	116	5	3	..	..	..	..	..
St Leonards ..	5,012	252	248	22	4,154	165	160	91
Scottsdale ..	1,583	49	48	6	16	15	17	284
Sorell ..	660	80	83	..	485	44	39	201
Spring Bay ..	316	14	12	15	..	..	..	..
Strahan ..	184	11	14	..	..	..	..	..
Ulverstone ..	3,657	97	103	26	2,162	104	105	39
Westbury ..	978	36	41	2	250	9	9	5
Wynyard ..	1,936	77	74	54	1,320	87	82	158
Zeehan ..	823	23	23	47	662	29	27	57
Total ..	111,928	5,508	5,516	1,108	80,403	2,649	2,662	2,535

(a) The municipalities of Tasman, Bruny and Waratah did not operate water or sewerage schemes during 1969-70.

(b) Excludes vacant properties.

(c) Beaconsfield municipality is served by the West Tamar Water Scheme; all debt and payments in the municipality in respect of water supply became the responsibility of the Rivers and Water Supply Commission on 1 July 1960. The scheme is maintained and managed by the municipality as agent for the Commission, which also determines the receipts to be collected by the municipality and reimburses all payments.

Chapter 5

DEMOGRAPHY

POPULATION

Introduction

Census of 30 June 1971

Data from the recent population census of June 1971 are not available at the time of printing this chapter. However, information which has subsequently become available has been included in Appendix B 'Later Information'.

Inclusion of Aborigines in Population Statistics

Section 127 of the Commonwealth Constitution required the exclusion of Aborigines from Commonwealth-conducted censuses from 1911 to 1966. As this section was repealed after the 1967 referendum, total figures have been adjusted from 1961 to include Aborigines but they are still excluded from the 1961 and 1966 detailed census classifications included under 'Characteristics of the Population'. Tasmanian figures are hardly affected since only one full-blood Aboriginal was recorded in the State at the 1966 Census.

Historical

In 1803, Lieutenant John Bowen's expedition of 49 persons made the first white settlement at Risdon Cove; at 30 June 1970, Tasmania's population was estimated to be 392,458 persons.

The Statistical Tables, Tasmania 1804 to 1823 show the first population record in 1816 when the white inhabitants numbered 1,461, analysed as 1,032 free settlers, 409 convicts and 20 children of convicts. From the year 1816, there exists a continuous annual record of Tasmania's population.

Source of Population Figures

There are two principal methods by which population figures are obtained: (i) by census enumeration; and (ii) intercensal estimates based on the application of vital and migration statistics to census data. The second method involves taking account of natural increase (excess of births over deaths), and net migration (excess of arrivals over departures) and applying these net figures to information obtained from an earlier census, the result being termed an intercensal estimate. (*Net migration* may be ascertained by two methods: taking account of *all* arrivals and departures, or only of arrivals and departures related to permanent change of place of residence. The former method was used for all estimates up to 30 June 1961, the latter method for later series. In relation to this change, see later section headed 'Changed Method of Estimating Population'.)

Censuses were conducted by the State in 1841, 1847, 1851, 1857, 1861, 1870, 1881, 1891 and 1901; the Commonwealth Statistician became responsible for censuses with the establishment of the Commonwealth Bureau of Census and Statistics and conducted them in 1911, 1921, 1933, 1947, 1954, 1961, 1966 and 1971.

Population from 1820

The table that follows is based on the traditional historical series and has been compiled to show the population at the end of each decade from 1820, the average annual growth in total population for each decade and the contribution made by natural increase.

Historical Summary of Tasmanian Population in Decades

Year	Estimated Population (a)			Average Annual Increase For Decade (b)	
	Males	Females	Persons	In Total Population	From Natural Increase (c)
1820 (d)	4,057	1,343	5,400	..	..
1830 (d)	18,108	6,171	24,279	1,888	..
1840 (d)	32,040	13,959	45,999	2,172	106
1850	44,229	24,641	68,870	2,287	656
1860	49,653	40,168	89,821	2,095	1,214
1870	53,517	47,369	100,886	1,107	1,622
1880	60,568	54,222	114,790	1,390	1,542
1890	76,453	68,334	144,787	3,000	2,496
1900	89,763	83,137	172,900	2,811	2,776
1910	97,026	92,781	189,807	1,691	3,322
1920	106,236	103,189	209,425	1,962	3,649
1930	111,148	108,835	219,983	1,056	3,127
1940	121,911	118,280	240,191	2,021	2,438
1950	140,339	135,563	275,902	3,571	3,768
1960	174,379	169,531	343,910	6,801	5,523
1970	198,130	194,328	392,458	4,855	5,116

(a) Up to 1900, at 31 December; from 1910, at 30 June.

(b) Decade ending in year shown.

(c) Excess of births over deaths in calendar years.

(d) Imperial military establishment of about 1,000 troops included; excluded after 1842.

Pattern of Net Migration

From the first settlement until 1850, the rapid growth in population was partly due to the British Government's convict transportation policy. After the cessation of transportation in 1853, the immigration rate slowed and natural increase became the more important component of population growth.

By comparing the last two columns in the previous table, it is possible to make an assumption as to whether net migration (excess of arrivals over departures) tended to be positive or negative in any decade.

In the two decades ended 1870 and 1880, for example, natural increase was becoming a more significant factor but the growth of population was checked by negative net migration. Important mining discoveries (e.g. Mt Bischoff, Zeehan and Mt Lyell) brought prosperity to the State, and the two decades ended 1890 and 1900 were characterised by positive net migration.

The main characteristic of the five decades up to 1950 was a persistent loss of population due to negative net migration, the decade most affected ending in 1930. This trend of net migration loss persisted till the end of World War II (1945). The Commonwealth Government's post-war immigration policy and the increasing industrialisation of the State combined to reverse the adverse trend of the previous half-century and the decade ending 1960 was characterised by positive net migration. However, in the decade ending 1970, some loss of population by negative net migration may be inferred. The actual annual increase in population since 1961 has been as follows:

Actual Annual Increase in Population from 1961

Year (a)	Persons	Year (a)	Persons
1961	6,430	1966.. ..	3,531
1962	5,328	1967.. ..	4,998
1963	r5,059	1968.. ..	5,597
1964	3,584	1969.. ..	6,434
1965	3,594	1970.. ..	3,994

(a) Year ended 30 June.

Census Populations from 1841

The following table records the population and masculinity at each census since 1841 and compares the rate of intercensal growth:

Population and Masculinity at each Census from 1841

Census Date (a)	Population			Average Annual Percentage Rate of Increase (b)	Masculinity (c)
	Males	Females	Persons		
31 Dec. 1841 (d) ..	r34,469	r16,981	r51,450	..	202.83
31 Dec. 1847 (d) ..	r45,000	r22,313	r67,313	r4.70	r201.54
1 Mar. 1851 ..	44,648	25,482	70,130	r1.07	175.21
31 Mar. 1857 ..	46,606	34,886	81,492	2.53	133.60
7 Apr. 1861 ..	49,593	40,384	89,977	2.51	122.80
7 Feb. 1870 ..	52,853	46,475	99,328	1.11	113.72
3 Apr. 1881 ..	61,162	54,543	115,705	1.40	112.14
5 Apr. 1891 ..	77,560	69,107	146,667	2.40	112.23
31 Mar. 1901 ..	89,624	82,851	172,475	1.64	108.17
3 Apr. 1911 ..	97,591	93,620	191,211	1.04	104.24
4 Apr. 1921 ..	107,743	106,037	213,780	1.12	101.61
30 June 1933 ..	115,097	112,502	227,599	0.52	102.31
30 June 1947 ..	129,244	127,834	257,078	0.87	101.10
30 June 1954 ..	157,129	151,623	308,752	2.65	103.63
30 June 1961 ..	177,628	172,712	350,340	1.82	102.85
30 June 1966 ..	187,391	184,045	371,436	1.18	101.82

(a) Imperial military establishment included until 1870, when British troops were withdrawn.

(b) Intercensal increase in total population as compound rate of growth per cent.

(c) Number of males per 100 females.

(d) Archival research shows double counting of certain persons; hence the revision.

Population growth varied widely during the nineteenth century. From 1841 to 1847 the annual population increase averaged 4.70 per cent, largely due to the transportation system. Following self-government, the colony entered a period of depression and the growth rate fell until the development of mining at the end of the century. A steady increase has been maintained throughout the twentieth century except for a slowing in the period of the 1930s and an immediate post-war acceleration due to an influx of European migrants.

Comparison with other States

The following table compares the Tasmanian population at censuses from 1901 with that of other States and Territories (full-blood Aborigines are excluded).

Australia: Census Populations of States and Territories (a)
(^{'000} Persons)

State or Territory	1901	1921	1933	1947	1954	1961	1966
N.S.W.	1,355	2,100	2,601	2,985	3,424	3,917	4,234
Victoria	1,201	1,531	1,820	2,055	2,452	2,930	3,220
Queensland	498	756	947	1,106	1,318	1,519	1,664
S.A.	359	495	581	646	797	969	1,092
W.A.	184	333	439	502	640	737	837
Tasmania	172	214	228	257	309	350	371
N.T.	5	4	5	11	17	27	37
A.C.T. (b) . . . .	..	3	9	17	30	59	96
Australia	3,774	5,436	6,630	7,579	8,987	10,508	11,550

(a) Census of 1911 not shown.

(b) Part of N.S.W. prior to 1911.

The next table shows the average annual rate of increase of population in each State and Territory during intercensal periods.

Australia: Average Annual Percentage Rate of Increase of Population
During Intercensal Periods

State or Territory	1911-21	1921-33	1933-47	1947-54	1954-61	1961-66
N.S.W.	2.46	1.76	0.99	1.98	1.94	1.57
Victoria	1.53	1.42	0.87	2.56	2.58	1.90
Queensland	2.24	1.86	1.11	2.53	2.04	1.84
S.A.	1.94	1.31	0.76	3.05	2.83	2.41
W.A.	1.66	2.29	0.97	3.51	2.03	2.58
Tasmania	1.12	0.52	0.87	2.65	1.82	1.18
N.T.	1.57	1.87	5.93	6.12	7.40	6.58
A.C.T.	4.14	10.71	4.65	8.70	9.93	10.30
Australia	2.01	1.63	0.96	2.46	2.26	1.91

Intercensal Adjustment

Earlier, mention was made of the method for calculating intercensal estimates of population by taking account of recorded natural increase and recorded net migration. The following two tables show these factors in successive intercensal periods from 1911; 'arrivals' and 'departures' in the first table refer to both short-term and long-term movements.

Analysis of Intercensal Increase in Population
(i) Recorded Natural Increase and Recorded Net Migration

Intercensal Period	Births	Deaths	Natural Increase	Arrivals	Departures	Net Migration
3.4.1911 to 4.4.1921 (a) ..	56,459	20,011	36,448	386,377	396,642	-10,265
4.4.1921 to 30.6.1933 (b) ..	61,955	25,174	36,781	507,209	535,780	-28,571
30.6.1933 to 30.6.1947 ..	73,130	34,767	38,363	482,577	493,305	-10,728
30.6.1947 to 30.6.1954 ..	51,615	17,557	34,058	870,768	845,009	+25,759
30.6.1954 to 30.6.1961 ..	59,282	18,631	40,651	1,070,297	1,065,254	+5,043
30.6.1961 to 30.6.1966 ..	41,276	14,786	26,490	1,071,892	1,077,942	-6,050

(a) Numbers recorded between the March quarters of 1911 and 1921, i.e. the quarter nearest to the census date.

(b) Numbers recorded from the March quarter of 1921.

(ii) Census Population, Intercensal Records and Intercensal Adjustment

Census Date	Population	Numbers Recorded Since Previous Census		Intercensal Adjustment (a)
		Natural Increase	Net Migration	
4.4.1921 ..	213,780	36,448	— 10,265	— 3,614
30.6.1933 ..	227,599	36,781	— 28,571	+ 5,609
30.6.1947 ..	257,078	38,363	— 10,728	+ 1,844
30.6.1954 ..	308,752	34,058	+ 25,759	— 8,143
30.6.1961 ..	350,340	40,651	+ 5,043	— 4,106
30.6.1966 ..	371,436	26,490	— 6,050	+ 656

(a) For definition, see following section; adjustment is to reconcile increase deduced from first column with net increase recorded in second and third columns.

In general, two population estimates are made for any specific date: (i) *original* estimates for dates subsequent to a census and made before another census is taken; and (ii) *revised* estimates for each newly-completed intercensal period to adjust for the difference between the new census result and the comparable estimate. Thus, all original estimates of population for the intercensal periods from 1911 to 1966 have been revised to reconcile with the results of successive censuses from 1921 to 1966 and can be regarded as final. Estimates of population for dates after 30 June 1966 must be regarded as subject to revision, and will be revised as soon as 1971 Census data are available.

Population Estimates, Intercensal Years

The following are estimates of State population as at 30 June and 31 December for successive years since 1954:

Estimated Population, 30 June and 31 December

Year	At 30 June			At 31 December		
	Males	Females	Persons	Males	Females	Persons
1954 (a)	157,129	151,623	308,752	162,393	156,825	319,218
1955	159,861	154,231	314,092	165,356	159,563	324,919
1956	162,196	156,274	318,470	168,695	162,645	331,340
1957	165,940	160,190	326,130	172,186	166,621	338,807
1958	169,123	163,943	333,066	174,465	169,433	343,898
1959	172,097	167,279	339,376	178,109	173,240	351,349
1960 (b)	174,379	169,531	343,910	180,511	175,458	355,969
1961 (a) (b) ..	177,628	172,712	350,340	178,864	174,394	353,258
1962	179,966	175,702	355,668	181,085	177,002	358,087
1963	182,439	178,288	360,727	183,330	179,469	362,799
1964	184,074	180,237	364,311	185,051	181,457	366,508
1965	185,789	182,116	367,905	186,483	183,125	369,608
1966 (a)	187,391	184,045	371,436	188,539	185,366	373,905
1967	189,912	186,522	376,434	191,446	188,182	379,628
1968	192,724	189,306	382,030	194,666	191,365	386,031
1969	196,041	192,423	388,464	197,289	193,862	391,151
1970	198,130	194,328	392,458	199,560	196,013	395,573

(a) Figures at 30 June as recorded at Census.

(b) Break in series; see following paragraphs.

'De Facto' and 'De Jure'

Australian censuses allot persons to the State where they happen to be at the census date (*de facto* basis) and not to the State where they normally reside (*de jure* basis); net migration, as defined and measured prior to 1961, was also on a *de facto* basis. Thus the December estimates in the table for dates prior to 1961 are consistently higher than those for the preceding June by anything from 10,000 to 15,000 persons, due to the seasonal tourist influx.

Changed Method of Estimating Population

Until the Census of 1966, the quarterly intercensal population of each State had been estimated using three components: (i) the previous census population; (ii) accumulated natural increase; and (iii) accumulated net migration. In this calculation, net migration was the algebraic sum of all arrivals *less* all departures, recorded for shipping and aircraft (Tasmania) and for shipping, aircraft, rail and omnibus movements (other States); it therefore included overseas and interstate travel irrespective of purpose. The interstate component of net migration was obviously a composite figure affected by persons who had permanently changed their State of residence but even more by persons who had merely visited another State on business or holiday.

The new method of estimation, introduced after the 1966 Census, still relies on the same three components but defines and measures net migration in a different way, so that holiday, business or other similar short-term movements between States are eliminated. *Intercensal estimates for the period 1961-1966 have been revised in accordance with the new method, and incorporate the changed concept of net migration.*

In the new method, the State population is estimated by adding to the previous census population the natural increase and the allocation of the net gain to Australia by overseas migration for that State; gains or losses that result from movements between States are also taken into account, in so far as they are recorded as transfers of residence under child endowment procedures or Commonwealth electoral procedures, supplemented by the results of any sample surveys. Revised estimates subsequent to the 1961 Census omit the effect of holiday, business or other similar short-term movements between the States.

Mean Population

Mean populations are calculated for twelve-month periods to provide a satisfactory average basis for calculations requiring allowance for the continuous change in population figures during such periods. From 1901 onwards, the mean population for any year has been calculated by the formula:

$$\text{Mean population} = \frac{a + 4b + 2c + 4d + e}{12}$$

where *a* is the population at the end of the quarter immediately preceding the year and *b*, *c*, *d* and *e* are the populations at the end of the quarters making up the year under consideration (e.g. in the case of a mean population for the calendar year 1970, the populations in the formula represented by *a*, *b*, *c*, *d* and *e* are those at the following dates: 31.12.1969, 31.3.1970, 30.6.1970, 30.9.1970 and 31.12.1970).

The following table shows the State's mean population on two bases: (i) for financial years; and (ii) for calendar years.

Mean Population, Financial and Calendar Years

Year	Estimated Mean Population		Year	Estimated Mean Population	
	Year Ended 30 June	Year Ended 31 December		Year Ended 30 June	Year Ended 31 December
1961 ..	350,077	353,623	1966 ..	369,600	371,632
1962 ..	353,175	355,682	1967 ..	373,916	376,588
1963 ..	358,180	360,590	1968 ..	379,367	382,298
1964 ..	362,758	364,554	1969 ..	385,685	388,646
1965 ..	366,366	367,970	1970 ..	390,819	392,917

Arrivals and Departures

Earlier in this chapter, reference was made to net migration as one factor determining the growth of the State population. Net migration, on a *de facto* basis for any period, is the difference between arrivals and departures, such movements being reported by the shipping companies and airlines. 'Arrivals' in the following table applies to all persons arriving in Tasmania from overseas or from other Australian States; it includes Tasmanians returning home. Similarly, 'departures' applies to all persons leaving Tasmania for overseas or for other Australian States; it includes visitors returning home. The table below shows annual arrivals and departures and also quarterly arrivals and departures for recent years, but the intercensal adjustments referred to in an earlier section have not been applied to the figures.

Recorded Arrivals and Departures: Tasmania (a)

Year	Arrivals	Departures	Quarter	Arrivals	Departures
1959 ..	162,761	160,569	1968—March Qtr ..	76,316	82,408
1960 ..	182,537	183,513	June Qtr ..	62,863	66,766
1961 ..	186,423	184,165	September Qtr ..	53,307	53,684
1962 ..	185,268	186,023	December Qtr ..	81,737	71,369
1963 ..	198,443	199,918	1969—March Qtr ..	83,019	88,119
1964 ..	219,930	223,380	June Qtr ..	68,160	76,073
1965 ..	248,964	249,619	September Qtr ..	59,045	59,574
1966 ..	257,463	256,068	December Qtr ..	85,962	73,303
1967 ..	270,934	271,560	1970—March Qtr ..	93,497	100,102
1968 ..	274,233	274,227	June Qtr ..	72,885	79,630
1969 ..	296,186	297,069	September Qtr ..	67,347	68,957
1970 ..	320,867	323,449	December Qtr ..	87,138	74,760

(a) Arrivals and departures on a *de facto* basis.

If annual arrivals and departures are added, the result may conveniently be termed 'annual movements' and a comparison of 'annual movements' over the years gives some indication of the degree to which travel and tourism have affected the State. Thus, in 1901, the year of Federation, annual arrivals and departures together totalled 51,000; in 1913, 91,800; in 1931, 58,500; in 1939, 120,200 and in 1970, almost 645,000. The increase in 'annual movements' since World War II is largely attributable to the growing use of air travel and roll-on roll-off ferries. Another factor has been industrial legislation providing for paid holidays (two weeks' leave was increased to three weeks' by the Federal Arbitration Commission in 1963); this has not only increased the tourist inflow but also has resulted in more Tasmanians taking holidays in other States.

The quarterly figures show a marked seasonal pattern with arrivals at their maximum in the spring and summer quarters (those ending December and March). Net migration figures on a *de facto* basis also show a seasonal pattern with substantial deviations from the quarterly average, approximating *plus* 11,000 to 13,000 persons in the December quarter; they also reflect the tourist outflow in the March quarter.

Population in Local Government Areas

The next table shows the population in cities, municipalities and statistical divisions at the Censuses of 1954, 1961 and 1966, and estimated for 1970. The following symbols are used in the table to indicate the Division (or Divisions) to which certain local government areas belong: (H)—Hobart Statistical Division; (SE)—South Eastern Statistical Division; (S)—Southern Statistical Division. Some local government areas (e.g. Brighton) form part of two Statistical Divisions.

The creation of the Hobart Statistical Division (following the 1966 Census) has had the effect of reducing the area of the Southern and South Eastern Statistical Divisions. (For fuller details, see subsequent section headed 'Population Centred on Hobart'.)

Population in Local Government Areas and Statistical Divisions at 30 June

Local Government Area (Statistical Division in Bold Type)				Census			Estimated 1970 (a)
				1954	1961	1966	
Hobart (H)	54,887	54,021	53,257	52,900			
Glenorchy (H)	25,810	35,682	39,053	42,740			
Clarence (H)	12,604	23,140	30,236	35,100			
Brighton (H) (SE)	2,570	2,115	2,207	2,330			
Glamorgan (SE)	1,099	1,128	1,125	1,110			
Green Ponds (SE)	949	969	880	830			
Richmond (SE)	1,679	1,673	1,658	1,610			
Sorell (H) (SE)	2,391	2,878	3,309	3,560			
Spring Bay (SE)	1,048	1,155	1,205	1,260			
Bruny (S)	591	504	400	390			
Esperance (S)	3,200	3,436	3,740	3,710			
Huon (S)	5,615	5,460	5,264	5,030			
Kingborough (H) (S)	8,335	10,025	10,322	10,610			
New Norfolk (H) (S)	9,429	10,217	10,315	10,900			
Port Cygnet (S)	2,861	2,754	2,550	2,390			
Tasman (S)	1,079	1,108	1,126	1,170			
Hobart	134,147	(b) 130,236	141,311	150,910			
South Eastern		(b) 7,116	7,123	6,920			
Southern		(b) 18,913	18,213	17,810			
Launceston	37,627	38,118	37,217	36,620			
North Central	37,627	38,118	37,217	36,620			
Burnie	13,785	16,745	18,611	20,060			
Circular Head	7,568	7,733	7,884	8,400			
Deloraine	5,477	5,574	5,205	5,110			
Devonport	11,827	14,276	16,758	19,240			
Kentish	4,510	4,167	5,614	6,000			
King Island	2,554	2,784	2,462	2,490			
Latrobe	4,145	4,367	4,807	5,190			
Penguin	3,889	4,673	4,677	5,000			
Ulverstone	8,091	9,365	10,150	11,220			
Wynyard	7,394	8,835	9,564	10,680			
North Western	69,240	78,519	85,732	93,390			

Population in Local Government Areas and Statistical Divisions at 30 June—*continued*

Local Government Area (Statistical Division in Bold Type)	Census			Estimated 1970 (a)
	1954	1961	1966	
Beaconsfield	7,573	8,550	9,983	11,100
Fingal	4,418	4,475	3,791	3,580
Flinders	1,027	1,407	1,234	1,180
George Town	2,516	3,677	5,101	5,690
Lilydale	4,583	6,744	7,841	8,350
Portland	1,412	1,274	1,391	1,480
Ringarooma	3,440	3,056	2,866	2,650
Scottsdale	3,189	3,417	3,628	3,820
North Eastern	28,158	32,600	35,835	37,850
Evandale	1,676	1,608	1,554	1,470
Longford	4,345	6,762	5,354	5,210
St Leonards	7,095	11,032	13,660	15,250
Westbury	3,974	4,581	4,964	5,130
North Midland	17,090	23,983	25,532	27,060
Bothwell	1,260	1,288	1,008	920
Campbell Town	1,919	1,893	1,753	1,590
Hamilton	6,143	4,178	4,329	4,210
Oatlands	2,914	2,691	2,501	2,330
Ross	680	672	617	610
Midland	12,916	10,722	10,208	9,660
Gormanston	523	507	540	600
Queenstown	4,497	4,624	4,393	4,600
Strahan	574	565	470	430
Waratah	514	367	698	1,960
Zeehan	2,816	3,191	3,489	4,000
Western	8,924	9,254	9,590	11,590
Migratory	650	879	675	650
Total Tasmania	308,752	350,340	371,436	392,460

(a) Figures rounded to nearest ten.

(b) These figures are partly estimated (see section prefacing table).

Distinction Between Urban and Rural

After the Censuses of 1954 and 1961, the Commonwealth Statistician published a population classification using the terms 'metropolitan', 'urban' and 'rural'. Delineation of the urban boundaries was subjective and the methods used were not completely comparable between States.

In order to develop an objective definition of 'urban' and 'rural' areas, Dr G. J. R. Linge of the Australian National University was commissioned by the Commonwealth Statistician to make a report.

At the 27th Conference of Statisticians in 1965, the following resolutions relating to the delimitation of urban areas and based substantially on Dr Linge's report were passed:

- (i) (a) That the concept of an *inner* and *outer* boundary around each of the State capitals and other cities with an urban population of at least 75,000 and a regional population of at least 100,000 be adopted; and
- (b) that the inner boundary be drawn to delimit the extent of urban development at each Census and it should, therefore be a moving boundary to be adjusted after each Census, except that any State may extend the inner boundary during intercensal years to encompass significant and well-defined peripheral population growth; and
- (c) that the outer boundary be designed to contain the anticipated urban development of a city for a period of at least 20 to 30 years.
- (ii) (a) That an urban boundary be defined as soon as possible for all other settlements with a population of 1,000 or more; and
- (b) that State, Statistical Division, Local Government Area, and other boundaries be ignored in delimiting these urban areas.
- (iii) That urban boundaries be defined so as to include all contiguous census collectors' districts which have a population density of 500 or more per square mile (subject to certain special rules).

Effect of Change in Tasmania

The resolution previously quoted as (i) affected only one centre in Tasmania since only the Hobart area has 'an urban population of at least 75,000 persons and a regional population of at least 100,000'. Resolutions (ii) and (iii) affected all other cities and towns, including Launceston. The concept of ringing the capital city with two statistical boundaries, an inner and an outer, was discussed in depth in the 1968 and 1969 *Year Books*. The following section broadly outlines the current situation in Tasmania.

Population Centred on Hobart

The Basic Criterion (1966 Census)

The basic criterion adopted for the delimitation of urban boundaries was *population density* as applied to small areas. As urbanisation increases, the change from rural to urban uses is accompanied by increasing population density. Extensive field investigations have shown that areas at the fringe, which have largely lost their rural characteristics and are developing towards urbanisation, have densities varying over only a small range. The adoption of a specific density from within that range provided a criterion which adequately delimits urban boundaries, and which can be applied objectively, uniformly, easily and without undue delay. *The criterion adopted was a density of 500 or more persons per square mile.* The geographic units classified according to the density criterion are census collectors' districts, the smallest units available. These areas vary in size and shape, but as far as possible they have been designed to ensure that significant urban development in large rural collectors' districts is split off as a separate collector's district.

Rigid application of the 500-person density criterion in every case would have created non-urban enclaves in obviously urban areas, e.g. sports grounds, industrial sites, etc., so special rules had to be formulated. The special rules are set out in the 1968 *Year Book*.

The Two-Boundary Concept

For the purpose of presenting the 1966 Census results, *two* boundaries were drawn:

(i) a fixed *Outer Boundary (Hobart Statistical Division)* enclosing the area of expected urban growth during the next 20 to 30 years (broadly this comprises the Cities of Hobart and Glenorchy, Clarence municipality and parts of Kingborough, New Norfolk, Brighton and Sorell municipalities); and

(ii) a flexible *Inner Boundary (Urban Hobart)* which moves outwards towards (i) as urbanisation develops. This area was formerly known as the *Hobart Metropolitan Area* and comprises the continuous area of urban development from Taroona in the south to Granton in the north and the eastern shore suburbs from Risdon Vale southward to Tranmere (the area includes only contiguous *urban* portions of the cities of Hobart and Glenorchy and of the municipalities of Clarence and Kingborough).

A detailed account of the *Two-Boundary Concept* was included in the 1970 *Year Book*.

The Hobart Statistical Division

The next table shows the population of the components of the *Hobart Statistical Division* at the Census of 1966, and also gives comparative figures from the Census of 1961. (To obtain the 1961 figures, it was necessary to draw boundaries according to the revised criteria and to use some estimations.)

Population of Hobart Statistical Division (a)

Components	Census, 30 June 1961	Census, 30 June 1966			Intercensal Increase	
		Males	Females	Persons	Number	Per Cent
Urban Hobart (b)	110,217	58,537	60,932	119,469	9,252	8.39
Other Urban Centres—						
Urban New Norfolk	5,494	2,875	2,895	5,770	276	5.02
Urban Kingston	2,980	1,630	1,633	3,263	283	9.50
Urban Sorell-Midway Pt ..	1,264	849	803	1,652	388	30.70
Urban Lauderdale	649	461	455	916	267	41.14
Total Other Urban	10,387	5,815	5,786	11,601	1,214	11.69
Total Urban	120,604	64,352	66,718	131,070	10,466	8.68
Rural	9,632	5,278	4,963	10,241	609	6.32
Total Hobart Statistical Division	130,236	69,630	71,681	141,311	11,075	8.50

(a) See 'Post-censal Estimates' immediately following for latest data.

(b) This concept replaces the obsolete classification *Hobart and Suburbs*.

Post-censal Estimates: At 30 June 1970, the population estimate for the *Hobart Statistical Division* was 150,910 persons, made up of 127,260 in *Urban Hobart* and 23,650 elsewhere in the Division.

Comparisons: The increase from 1961-1966 for the *Hobart Statistical Division* relates to the population within the fixed outer boundary, i.e. the area is the same in both censuses; for *Urban Hobart* the intercensal increase 1961-1966 reflects: (i) population changes within the 1961 boundaries; and (ii) urban growth beyond these boundaries as contained by the 1966 boundaries.

Population Centred on Launceston

Population of Launceston and Suburbs

In 1891 the Tasmanian Government Statistician first published figures for an area called *Launceston and Suburbs* which comprised Launceston City plus the urban areas of surrounding municipalities; a practice continued until 1966. In 1966, to coincide with the population census, the new terminology *Urban Launceston* was adopted in lieu of *Launceston and Suburbs*; however, at the time of this change, the *Urban Launceston* boundary differed very little from that of the former *Launceston and Suburbs*.

Urban Launceston's population at 30 June was: 1961 Census, 56,465 persons; 1966 Census, 60,456; 1970 (estimate), 62,500.

Urban and Rural Population of Tasmania

The population density criteria were applied uniformly throughout Tasmania after the 1966 Census and the next table has been compiled to show a dissection of each local government area into urban and rural components; *Urban Hobart* and *Urban Launceston* are specified separately but it should be noted that these two areas are identical in statistical concept with other urban localities.

The localities classified as urban had to have populations exceeding 1,000 persons, but special rules applied to holiday resorts where housing density was taken into account. The urban-rural dissection for Tasmania follows:

Population in Local Government Areas Classified as Urban and Rural
at Census, 30 June 1966

Local Government Area (Statistical Division in Bold Type)				Total	Rural	Urban Hobart	Urban Launceston	Other Urban (a)
Hobart	(H)	..	..	53,257	1,118	52,139	..	..
Glenorchy	(H)	..	..	39,053	1,283	37,770	..	..
Clarence	(H)	..	..	30,236	2,334	26,986	..	916
Brighton	{(H)	..	..	2,207	{1,150	..	..	..
	{(SE)	..	..		{1,057	..	..	..
Glamorgan	(SE)	..	..	1,125	1,125	..	..	..
Green Ponds	(SE)	..	..	880	880	..	..	..
Richmond	(SE)	..	..	1,658	1,658	..	..	..
Sorell	{(H)	..	..	3,309	{459	..	..	1,652
	{(SE)	..	..		{1,198	..	..	..
Spring Bay	(SE)	..	..	1,205	1,205	..	..	..
Bruny	(S)	..	..	400	400	..	..	..
Esperance	(S)	..	..	3,740	3,740	..	..	..
Huon	(S)	..	..	5,264	5,264	..	..	..
Kingborough	{(H)	..	..	10,322	{3,363	2,574	..	3,263
	{(S)	..	..		{1,122	..	..	..
New Norfolk	{(H)	..	..	10,315	{534	..	..	5,770
	{(S)	..	..		{4,011	..	..	..
Port Cygnet	(S)	..	..	2,550	2,550	..	..	..
Tasman	(S)	..	..	1,126	1,126	..	..	..
Hobart	..	..	..	141,311	10,241	119,469	..	11,601
South Eastern	..	..	..	7,123	7,123	..	..	..
Southern	..	..	..	18,213	18,213	..	..	..
Launceston	..	..	..	37,217	..	..	37,217	..
North Central	..	..	..	37,217	..	..	37,217	..

**Population in Local Government Areas Classified as Urban and Rural
At Census, 30 June 1966—continued**

Local Government Area (Statistical Division in Bold Type)	Total	Rural	Urban Hobart	Urban Launceston	Other Urban (a)
Burnie	18,611	2,805	..	..	15,806
Circular Head	7,884	5,186	..	..	2,698
Deloraine	5,205	3,412	..	..	1,793
Devonport	16,758	1,883	..	..	14,875
Kentish	5,614	5,614	..	..	..
King Island	2,462	2,462	..	..	..
Latrobe	4,807	2,566	..	..	2,241
Penguin	4,677	2,528	..	..	2,149
Ulverstone	10,150	3,308	..	..	6,842
Wynyard	9,564	3,973	..	..	5,591
North Western	85,732	33,737	..	..	51,995
Beaconsfield	9,983	4,179	..	3,903	1,901
Fingal	3,791	3,791	..	..	..
Flinders	1,234	1,234	..	..	..
George Town	5,101	1,015	..	..	4,086
Lilydale	7,841	2,254	..	5,587	..
Portland	1,391	1,391	..	..	..
Ringarooma	2,866	2,866	..	..	..
Scottsdale	3,628	1,930	..	..	1,698
North Eastern	35,835	18,660	..	9,490	7,685
Evandale	1,554	1,527	..	27	..
Longford	5,354	2,664	..	..	2,690
St Leonards	13,660	877	..	12,783	..
Westbury	4,964	4,025	..	939	..
North Midland	25,532	9,093	..	13,749	2,690
Bothwell	1,008	1,008	..	..	..
Campbell Town	1,753	1,753	..	..	..
Hamilton	4,329	4,329	..	..	..
Oatlands	2,501	2,501	..	..	..
Ross	617	617	..	..	..
Midland	10,208	10,208	..	..	..
Gormanston	540	540	..	..	..
Queenstown	4,393	98	..	..	4,295
Strahan	470	470	..	..	..
Waratah	698	698	..	..	..
Zeehan	3,489	698	..	..	2,791
Western	9,590	2,504	..	..	7,086
Migratory	675	..	..	..	..
Total Tasmania	371,436	109,779	119,469	60,456	81,057

(a) Details of 'Other Urban' localities and of Urban Hobart and Urban Launceston are given in the next section.

Details of Urban Localities

In the previous table, each local government area has been dissected to show the distribution of its population, the final column reading 'Other Urban'. The next table gives details of the localities classified as urban (but excludes Urban Hobart and Urban Launceston).

Populations in Localities Classified as Urban (Excluding Urban Hobart and Urban Launceston) at Census of 30 June 1966

Locality Classed as Urban	Local Government Area (a)	Persons in Urban Locality	Locality Classed as Urban	Local Government Area (a)	Persons in Urban Locality
Lauderdale ..	Clarence ..	(b) 916	Ulverstone ..	Ulverstone ..	6,842
Sorell ..	Sorell ..	1,652	Wynyard ..	Wynyard ..	3,355
Kingston ..	Kingborough ..	3,263	Beaconsfield ..	Beaconsfield ..	1,028
New Norfolk ..	New Norfolk ..	5,770	Beauty Point ..	Beaconsfield ..	(b) 873
Burnie-Somerset ..	Burnie ..	15,806	George Town ..	George Town ..	4,086
Burnie-Somerset ..	Wynyard ..	2,236	Scottsdale ..	Scottsdale ..	1,698
Smithton ..	Circular Head ..	2,698	Longford ..	Longford ..	1,688
Deloraine ..	Deloraine ..	1,793	Perth ..	Longford ..	1,002
Devonport ..	Devonport ..	14,875	Queenstown ..	Queenstown ..	4,295
Latrobe ..	Latrobe ..	2,241	Rosebery ..	Zeehan ..	1,774
Penguin ..	Penguin ..	2,149	Zeehan ..	Zeehan ..	1,017

(a) See previous table for *total* population of Local Government Area.

(b) Defined as *urban* under special rules relating to *resort areas*.

Full details of Urban Hobart and the Hobart Statistical Division follow:

Population of the Hobart Statistical Division at Census of 30 June 1966

Local Government Area	Total	Rural	Urban Hobart	Other Urban	Locality Classified as Urban
Hobart	53,257	1,118	52,139	..	..
Glenorchy	39,053	1,283	37,770	..	..
Clarence	30,236	2,334	26,986	916	Lauderdale (a)
Brighton (Part)	1,150	1,150	..	..	..
Sorell (Part)	2,111	459	..	1,652	Sorell ..
Kingborough (Part)	9,200	3,363	2,574	3,263	Kingston
New Norfolk (Part)	6,304	534	..	5,770	New Norfolk
Total Hobart Div...	141,311	10,241	119,469	11,601	..

(a) Defined as *urban* under the special rules relating to *resort areas*.

The analysis of the local government areas enclosing Launceston follows:

**Population of Launceston and Surrounding Local Government Areas
at Census of 30 June 1966**

Local Government Area (a)	Total	Rural	Urban Launceston	Other Urban	Locality Classified as Urban
Launceston (N. Central)	37,217	..	37,217	..	..
Beaconsfield (NE) ..	9,983	4,179	3,903	{ 1,028	Beaconsfield
Evandale (N. Mid.) ..	1,554	1,527	27	873	Beauty Point (b)
Lilydale (NE)	7,841	2,254	5,587	..	..
St Leonards (N. Mid.) ..	13,660	877	12,783	..	..
Westbury (N. Mid.) ..	4,964	4,025	939	..	..
Total ..	(c)	(c)	(c)60,456	(c)	..

(a) Statistical Division shown in brackets.

(b) Defined as *urban* under the special rules relating to *resort areas*.

(c) Total distributed in North Central, North Eastern and North Midland Statistical Divisions.

Post-censal Locality Estimates: At 30 June 1970, the estimated populations of selected urban localities were: Urban Hobart, 127,260; Urban Launceston, 62,500; Burnie-Somerset, 19,710; Devonport, 17,120; Ulverstone, 7,580; New Norfolk, 6,350.

Decentralisation of Population

The next table compares the proportions of urban and rural population of the Australian States at the Census of 30 June 1966. (In the table, Urban Launceston is included with 'Other Urban'.)

**Proportion of Urban and Rural Population, Australian States and Territories
at Census of 30 June 1966
(Per Cent)**

Classification	Proportion of Total Population of State								
	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
Urban—									
Metropolitan	57.78	65.54	43.21	66.67	59.76	32.17	..	96.14	58.14
Other ..	28.61	19.97	33.55	15.92	16.76	38.10	76.81	..	25.08
Rural ..	13.40	14.39	23.12	17.27	23.11	29.55	22.40	3.86	16.61
Migratory ..	0.21	0.10	0.12	0.14	0.37	0.18	0.79	..	0.17
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Populations of Australian Cities

The populations of Australian capital cities at censuses since 1901 are shown in the following table:

Australia: Populations of Capital Cities (a) at Census Dates (b)

Particulars (c)	1901	1921	1933	1947	1954	1961 (d)	1966 (d)
PERSONS ('000)							
Sydney	482	899	1,235	1,484	1,863	2,197	2,446
Melbourne	496	783	992	1,226	1,524	1,859	2,110
Brisbane	119	210	300	402	502	588	719
Adelaide	162	256	313	382	484	580	728
Perth	67	155	208	273	349	424	500
Hobart	35	52	60	77	95	110	119
Canberra .. ..	..	..	7	15	28	56	92
Total	1,361	2,355	3,115	3,859	4,845	5,814	6,714

PROPORTION OF TOTAL AUSTRALIAN POPULATION

Per Cent	36	43	47	51	54	55	58
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(a) Full-blood Aborigines are not included in this table.

(b) Census of 1911 not shown.

(c) Some of the apparent increase in the percentage of total population living in capital cities is due to periodic revision and extension of metropolitan boundaries.

(d) *Objective density criterion* introduced in 1966 Census, with 1961 figures revised on a comparable basis.

The following table lists the major Australian cities and towns with a population of over 20,000. The Tasmanian towns of Burnie-Somerset and Devonport with populations less than 20,000 have also been included.

Population of Principal Cities and Towns (a): States and Territories

City or Town	At 30 June		City or Town	At 30 June	
	1966 (b)	1970 (c)		1966 (b)	1970 (c)
New South Wales—			Queensland—		
Sydney Statistical Division (d) ..	2,542,207	2,780,310	Brisbane Statistical Division ..	778,193	853,000
Newcastle Statistical District (e) ..	327,578	346,970	Townsville ..	59,031	69,000
Greater Cessnock ..	43,521	34,490	Gold Coast ..	49,485	63,400
Maitland ..	28,438	30,000	Toowoomba ..	55,805	60,250
Wollongong Statistical District (f) ..	177,456	203,110	Rockhampton ..	46,119	48,100
Blue Mountains ..	30,733	34,080	Cairns ..	26,802	28,300
Broken Hill ..	30,043	30,620	Bundaberg ..	25,444	27,750
Wagga Wagga ..	25,820	28,330	Mackay ..	18,646	20,000
Albury ..	25,112	27,330	Mount Isa ..	17,684	21,000
Tamworth ..	21,683	23,850	Maryborough ..	19,670	20,100
Orange ..	20,996	22,860	South Australia—		
Goulburn ..	20,871	21,540	Adelaide Statistical Division ..	771,561	825,400
Lismore ..	19,757	20,540	Whyalla ..	22,131	30,500
Victoria—			Western Australia—		
Melbourne Statistical Division ..	2,230,793	2,425,300	Perth Statistical Division ..	559,298	663,000
Geelong Statistical District ..	111,365	119,320	Tasmania—		
Ballarat ..	41,661	41,930	Hobart Statistical Division ..	141,311	150,910
Bendigo ..	30,806	31,750	Launceston ..	60,456	62,500
			Burnie-Somerset ..	18,042	19,710
			Devonport ..	14,874	17,120
			Northern Territory—		
			Darwin (g) ..	21,671	32,943
			Australian Capital Territory—		
			Canberra Statistical District (b) ..	107,138	146,450

(a) Full-blood Aborigines included in this table.

(b) Population at Census date.

(c) Estimate.

(d) Includes part of Blue Mountains.

(e) Includes Maitland and the majority of Greater Cessnock.

(f) Includes Shellharbour.

(g) Proposed greater Darwin Area.

(b) Includes Queanbeyan.

CHARACTERISTICS OF THE POPULATION

Age Distribution

Census figures for age are subject to reporting inaccuracies, e.g. preference for certain ages. The 1966 Census figures (benchmarks for intercensal age distribution estimates) have been adjusted for these inaccuracies.

The estimated age distribution for 1970 is based on the adjusted 1966 Census figures and subsequent records of births, deaths, arrivals and departures. The adjusting and updating procedures used are not sufficiently accurate to allow preparation of estimates down to the last unit. Therefore in the next table, the population figures are given to the nearest ten.

Age Distribution of the Population at 30 June

Age Last Birthday (Years)	1966 (Census) (a)			1970 (Estimate)		
	Males	Females	Persons	Males	Females	Persons
(NUMBER)						
0-4	20,500	16,610	40,110	19,940	18,880	38,820
5-9	21,340	20,350	41,690	21,630	20,440	42,060
10-14	19,560	18,810	38,370	21,040	20,070	41,120
15-19	17,670	17,210	34,890	19,080	18,280	37,360
20-24	12,960	12,700	25,660	16,810	16,400	33,210
25-29	11,980	11,300	23,280	12,980	12,300	25,290
30-34	10,940	10,220	21,160	11,660	11,130	22,790
35-39	11,990	10,980	22,970	11,210	10,290	21,510
40-44	12,000	11,520	23,530	12,040	11,010	23,050
45-49	10,660	10,320	20,980	11,630	11,400	23,020
50-54	10,320	9,780	20,100	10,070	9,900	19,970
55-59	8,540	8,000	16,550	9,570	9,290	18,860
60-64	6,570	6,510	13,080	7,530	7,390	14,920
65-69	4,760	5,620	10,380	5,340	5,740	11,080
70-74	3,330	4,700	8,030	3,550	4,790	8,330
75-79	2,400	3,440	5,840	2,180	3,590	5,770
80-84	1,240	1,880	3,110	1,250	2,250	3,500
85 and Over ..	640	1,080	1,720	620	1,180	1,800
Total	187,390	184,050	371,440	198,130	194,330	392,460

(a) The actual population at 30 June 1966 was 371,435 persons comprising 187,390 males and 184,045 females.

Conjugal Condition

The next table shows the conjugal condition of the population at the Census of 1966 compared with that of the previous Census of 1961:

Conjugal Condition of the Population

Conjugal Condition	Census, 30 June 1961		Census, 30 June 1966			
	Persons		Males	Females	Persons	
	Total	Proportion of Total			Total	Proportion of Total
Never Married—		per cent				per cent
Under fifteen years of age ..	117,299	33.48	61,396	58,768	120,164	32.35
Fifteen years and over ..	58,039	16.57	37,078	27,287	64,365	17.33
Total	175,338	50.05	98,474	86,055	184,529	49.68
Married	153,014	43.68	81,811	81,320	163,131	43.92
Married but permanently separated	4,096	1.17	2,090	2,200	4,290	1.15
Widowed	15,563	4.44	3,782	13,177	16,959	4.57
Divorced	2,329	0.66	1,233	1,293	2,526	0.68
Grand Total ..	350,340	100.00	187,390	184,045	371,435	100.00

Birthplaces

The following table showing birthplaces of the population at the Censuses of 1961 and 1966, is of particular interest in view of the Commonwealth's policy of actively encouraging migration from Europe. From the figures

it is noticeable that the proportional representation of the immigrants' birthplaces has not varied significantly in the intercensal period 1961 to 1966. Apart from those born in the United Kingdom and Eire, there has been a levelling off in the numbers of persons of European birth. Although Greece and Yugoslavia are also exceptions to this trend, the total numbers involved are too small to be very significant.

Birthplaces of the Population

Birthplace	Census, 30 June 1961		Census, 30 June 1966			
	Persons		Males	Females	Persons	
	Total	Pro-portion of Total			Total	Pro-portion of Total
		per cent				per cent
Australia and Territories ..	317,478	90.62	167,572	168,100	335,672	90.37
New Zealand	1,128	0.32	617	620	1,237	0.33
United Kingdom and Eire ..	16,741	4.78	9,911	9,190	19,101	5.14
Germany	2,223	0.63	1,137	879	2,016	0.54
Greece	489	0.14	451	304	755	0.20
Italy	1,536	0.44	918	530	1,448	0.39
Netherlands	3,556	1.02	1,809	1,558	3,367	0.91
Poland	1,608	0.46	1,064	503	1,567	0.42
Yugoslavia	699	0.20	588	233	821	0.22
Other European Countries ..	2,993	0.85	1,842	1,048	2,890	0.78
Total Europe ..	29,845	8.52	17,720	14,245	31,965	8.61
Other Birthplaces	1,889	0.54	1,481	1,080	2,561	0.69
Grand Total ..	350,340	100.00	187,390	184,045	371,435	100.00

The analysis of the birthplaces of the population at 30 June 1966 can be viewed broadly as a measure of the degree to which migration from overseas has contributed to population growth over a long period.

The next table contrasts the position in the various States and Territories at 30 June 1966:

Australia: Birthplaces of the Population, Census of 30 June 1966 Proportion of Population of State or Territory According to Birthplace (Per Cent)

Birthplace	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
Australia and Territories ..	82.73	78.89	87.99	77.50	76.27	90.37	77.64	73.70	81.61
New Zealand ..	0.61	0.36	0.46	0.20	0.32	0.33	0.95	0.81	0.45
U.K. and Eire ..	7.20	7.44	6.38	11.18	12.44	5.14	8.25	10.24	7.87
Other European Countries ..	7.69	11.76	4.10	10.11	8.73	3.47	10.11	12.79	8.53
Other Birthplaces ..	1.77	1.55	1.07	1.01	2.24	0.69	3.05	2.46	1.54
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

It will be observed that the Tasmanian pattern differs significantly from that of other States and Territories, the most similar being that of Queensland. Tasmania has the highest percentage of 'Australian' born of any State. The percentage of 'non-British' born, i.e. those born outside the British Commonwealth and Eire, is the lowest of any State. The following table shows particulars of the period of residence in Australia of persons born outside Australia, both for Tasmania and for the Commonwealth.

Period of Residence in Australia of Persons Born Outside Australia
at Census of 30 June 1966

Period of Residence (Years)	Tasmania		Australia	
	Persons		Persons	
	Total	Proportion of Total	Total	Proportion of Total
		per cent		per cent
Born Outside Australia (a)—				
Under 1	2,566	0.69	161,861	1.40
1 and under 2	1,838	0.49	124,341	1.08
2 and under 3	1,494	0.40	110,329	0.96
3 and under 4	1,020	0.27	88,038	0.76
4 and under 5	993	0.27	72,902	0.63
Total Under 5	7,911	2.13	557,471	4.83
5 and Over	27,078	7.29	1,527,072	13.22
Not Stated	864	0.23	46,378	0.40
Total Born Outside Australia	35,853	9.65	2,130,921	18.45
Born in Australia	335,582	90.35	9,419,542	81.55
Grand Total	371,435	100.00	11,550,463	100.00

(a) Includes persons born in Australian external territories.

Nationality

Comparable percentages of persons of British nationality at 30 June 1966 were: N.S.W., 95.79; Victoria, 93.61; Queensland, 98.28; S.A., 95.24; W.A., 96.26; Tasmania, 98.46; N.T., 93.17; A.C.T., 92.51; Australia, 95.58. It should be noted that the Federal *Nationality and Citizenship Act* 1948 created, for the first time, the status of 'Australian citizen'; all Australian citizens under the provisions of this Act are declared to be British subjects. From the earlier table on birthplaces of the Tasmanian population, it is established that 95.84 per cent were born in Australia, N.Z., the United Kingdom or Eire. While birthplace does not necessarily determine nationality in all cases, comparison of birthplace with nationality suggests that the percentage of naturalised British subjects was probably less than three per cent of the Tasmanian population at 30 June 1966.

The question has been asked: why is there no mention of 'Australian' as a separate nationality in census tables? The chief difficulty lies in the fact that persons born in the United Kingdom, New Zealand, Eire, Canada, and other proclaimed countries with British links, may permanently reside in Australia, enjoy the same privileges as native-born citizens but never take any formal steps to acquire Australian citizenship; such persons at the time of a census, may report their nationality as 'Irish', 'Australian' or 'British'. A further difficulty is that some native-born citizens may report their nationality as 'British', rather than 'Australian'. Accordingly, no attempt is made to isolate Australian citizens in the British group.

The following table shows the nationality of the Tasmanian population at 30 June 1966 and also at 30 June 1961:

Nationality (i.e. Allegiance) of the Population

Nationality	Census, 30 June 1961		Census, 30 June 1966			
	Persons		Males	Females	Persons	
	Total	Pro-portion of Total			Total	Pro-portion of Total
		per cent				per cent
British (a)—						
Born in Australia	317,478	90.62	167,531	168,051	335,582	90.35
Born Outside Australia (b)—	24,927	7.12	16,345	13,795	30,140	8.11
Total British	342,405	97.74	183,876	181,846	365,722	98.46
Foreign—						
Dutch	2,241	0.64	685	580	1,265	0.34
German	1,223	0.35	467	325	792	0.21
Greek	384	0.11	325	231	556	0.15
Italian	1,213	0.35	550	363	913	0.25
Polish	649	0.19	257	160	417	0.11
Yugoslavian	397	0.11	270	108	378	0.10
Other (incl. Stateless) ..	1,828	0.52	960	432	1,392	0.38
Total Foreign	7,935	2.26	3,514	2,199	5,713	1.54
Grand Total	350,340	100.00	187,390	184,045	371,435	100.00

(a) All persons of individual citizenship status who, by virtue of the Federal *Nationality and Citizenship Act* 1948, are deemed to be British subjects. Includes naturalised British. For purposes of this table, Irish nationality is included with British.

(b) Includes persons born in Australian external territories.

Occupational Status

Lack of Comparability

The method of classifying the occupational status of the population was changed in the 1966 Census. Essentially the difference between the pre-1966 approach to labour force and the 1966 approach was: in the pre-1966 censuses people were invited to classify themselves (e.g. as unemployed, employee, etc.); in the 1966 Census people were invited to describe their activity in a specific week and the Statistician, using pre-determined definitions, classified them on the basis of their answers. One result of this change was to classify as labour force some persons who would possibly have excluded themselves in the 1961 Census.

The effect of the new approach and definitions was to include additional persons in the labour force. This applied particularly to those working part-time (sometimes for only a few hours a week) some of whom in 1961 may not have considered themselves as '... engaged in an industry, business, profession, trade or service'.

The new method of classification is fully discussed in Chapter 13, 'Labour, Wages and Prices', the relevant sections being headed 'Employment' and 'Unemployment'. 'At Work' was the classification employed at the 1961 Census; the 1966 equivalent was 'Employed', a changed concept.

The next table shows the occupational status of persons in the labour force at the respective census dates (30 June 1961 and 1966). Due to the change in classification the comparison is approximate only.

Occupational Status: Analysis of Those in the Labour Force

Occupational Status	Census, 30 June 1961		Census, 30 June 1966			
	Persons		Males	Females	Persons	
	Total	Proportion of Labour Force			Total	Proportion of Labour Force
In Labour Force—		per cent				per cent
At Work—						
Employer	8,221	6.28	8,245	1,759	10,004	6.79
Self-Employed	13,191	10.08	9,162	1,644	10,806	7.33
Employee (a)	104,716	79.99	87,572	35,451	123,023	83.51
Helper (b)	699	0.53	432	940	1,372	0.93
Total Employed	126,827	96.88	105,411	39,794	145,205	98.56
Not at Work—						
Unemployed (c)	2,592	1.98	1,146	971	2,117	1.44
Others not at Work	1,498	1.14	..	..	..	..
Total in Labour Force	130,917	100.00	106,557	40,765	147,322	100.00
Not in Labour Force	219,423	..	80,833	143,280	224,113	..
Grand Total	350,340	..	187,390	184,045	371,435	..

(a) On wage or salary.

(b) Not on wage or salary.

(c) In 1961, total of those 'Unable to Secure Employment'; in 1966, total of 'Unemployed'.

See the previous text for changes in classification.

The following table shows the status of persons not in the labour force in the 1961 and 1966 Censuses:

Occupational Status: Analysis of Those not in the Labour Force

Occupational Status	Census, 30 June 1961		Census, 30 June 1966			
	Persons		Males	Females	Persons	
	Total	Proportion of Those not in Labour Force			Total	Proportion of Those not in Labour Force
Not in Labour Force—		per cent				per cent
Child not at School	45,447	20.71	22,544	21,474	44,018	19.64
Child Attending School or Full-time Student	79,114	36.06	44,325	42,103	86,428	38.56
Mainly Dependent on Pension or Superannuation	22,230	10.13	9,310	13,551	22,861	10.20
Independent Means	3,390	1.54	1,287	1,541	2,828	1.26
Home Duties	65,619	29.91	..	61,113	61,113	27.27
Inmates of Institutions	2,349	1.07	1,248	1,594	2,842	1.27
Other	1,274	0.58	2,119	1,904	4,023	1.80
Total Not in Labour Force	219,423	100.00	80,833	143,280	224,113	100.00
Total in Labour Force	130,917	..	106,557	40,765	147,322	..
Grand Total	350,340	..	187,390	184,045	371,435	..

The Tasmanian proportion of population in the labour force is lower than the Australian average, the variation being more marked in the case of females as shown in the following table:

Tasmania and Australia: Proportions of Population in the Labour Force (Per Cent)

Particulars	Census, 30 June 1961			Census, 30 June 1966		
	Males	Females	Persons	Males	Females	Persons
Tasmania	57.02	17.15	37.37	56.86	22.15	39.66
Australia	59.59	20.38	40.21	58.83	25.02	42.05

Industry

The next table shows the main groups of industry in which the labour force of Tasmania was employed at 30 June 1966 compared with 1961.

Industry of Population

Industry Group	Census, 30 June 1961		Census, 30 June 1966			
	Persons		Males	Females	Persons	
	Total	Proportion of Labour Force			Total	Proportion of Labour Force
		per cent				per cent
Primary Production	17,157	13.11	15,054	2,161	17,215	11.69
Mining and Quarrying	3,631	2.77	3,245	128	3,373	2.29
Manufacturing	29,531	22.56	27,109	6,850	33,959	23.05
Electricity, Gas, Water and Sanitary Services (a)	3,165	2.42	3,743	258	4,001	2.72
Building and Construction	13,343	10.19	13,956	333	14,289	9.70
Transport and Storage	9,014	6.89	8,294	566	8,860	6.01
Communication	3,645	2.78	2,907	984	3,891	2.64
Finance and Property	3,726	2.85	2,846	1,720	4,566	3.10
Commerce	20,547	15.69	14,194	8,777	22,971	15.59
Public Authority (n.e.i.) and Defence Services	5,010	3.83	3,941	1,556	5,497	3.73
Community and Business Services (including Professional) (b) ..	13,023	9.95	6,933	10,555	17,488	11.87
Amusement, Hotels, Cafes, Personal Service, etc.	7,038	5.38	3,241	5,037	8,278	5.62
Other	2,087	1.59	1,094	1,840	2,934	1.99
Total in Labour Force	130,917	100.00	106,557	40,765	147,322	100.00
Persons not in Labour Force ..	219,423	..	80,833	143,280	224,113	..
Grand Total	350,340	..	187,390	184,045	371,435	..

(a) Production, supply and maintenance.

(b) Includes police, fire brigades, hospitals, medical and dental services, education, business services such as consultant engineering and surveying, accounting and auditing, industrial and trade associations, advertising, etc.

In the case of employees, the basis of classification is the industry of the employer; thus a carpenter employed by a mining company will appear under 'Mining and Quarrying', not under 'Building and Construction'. Employees in the government sector (Commonwealth, State, Semi-Government, and Local Government) are allocated to appropriate industry groupings, e.g. State railway workers to 'Transport'; employees not classified under any of the major industry groups in the above table appear under 'Public Authority n.e.i.'.

'Labour Force' should not be confused with wage and salary earners. A full discussion of this concept is included in Chapter 13.

Religion

Commencing with the Census of 1933, and in subsequent censuses, the collection forms carried a note reminding the public that there was no legal obligation to answer the question on religion. The numbers and proportions of the population not answering the question appear in the associated table as 'No Reply'.

The following table analyses the Tasmanian population according to religion reported at the Censuses of 1961 and 1966.

Religions of the Population

Religion	Census, 30 June 1961		Census, 30 June 1966			
	Persons		Males	Females	Persons	
	Total	Pro- portion of Total			Total	Pro- portion of Total
		per cent				per cent
Christian—						
Baptist	7,227	2.06	3,719	4,040	7,759	2.09
Brethren	2,008	0.57	1,508	1,554	3,062	0.82
Catholic (a)	63,993	18.27	36,058	35,031	71,089	19.14
Churches of Christ	2,507	0.72	1,328	1,373	2,701	0.73
Church of England	159,101	45.41	83,098	82,925	166,023	44.70
Congregational	4,193	1.20	2,145	2,385	4,530	1.22
Greek Orthodox	1,009	0.29	880	634	1,514	0.41
Lutheran	1,555	0.44	922	820	1,742	0.47
Methodist	42,236	12.06	20,994	22,090	43,084	11.60
Presbyterian	16,757	4.78	8,648	8,850	17,498	4.71
Salvation Army	2,316	0.66	1,288	1,373	2,661	0.72
Seventh Day Adventist	1,567	0.45	663	834	1,497	0.40
Protestant (Undefined)	1,975	0.56	980	944	1,924	0.52
Other (including Christian Un- defined)	5,090	1.45	2,584	2,659	5,243	1.41
Total Christian	311,534	88.92	164,815	165,512	330,327	88.93
Non-Christian—						
Hebrew	150	0.04	119	88	207	0.06
Other	118	0.04	199	79	278	0.07
Total Non-Christian	268	0.08	318	167	485	0.13
Indefinite	1,766	0.50	1,212	1,063	2,275	0.61
No Religion	775	0.22	1,345	675	2,020	0.54
No Reply	35,997	10.28	19,700	16,628	36,328	9.78
Grand Total	350,340	100.00	187,390	184,045	371,435	100.00

(a) Includes Catholic and Roman Catholic. (The Census forms do not list religions and followers of the one religion may describe it under different titles.)

VITAL STATISTICS

Historical

In 1839, John Montagu, Colonial Secretary of Van Diemen's Land, submitted to the Governor, Sir John Franklin, a series of statistical returns; below is shown part of Return No. 17:

Vital Statistics of Van Diemen's Land

Year					Births	Deaths	Marriages
1824	..	..	..	..	177	132	75
1828	..	..	..	..	309	250	120
1829	..	..	..	..	301	260	166
1830	..	..	..	..	460	270	163
1831	..	..	..	..	422	282	114
1833	..	..	..	..	455	379	257
1834	..	..	..	..	714	557	370
1835	..	..	..	..	730	525	356
1836	..	..	..	..	684	443	496
1837	..	..	..	..	754	597	381
1838	..	..	..	..	717	403	331

The complete table covers the period 1824-1838 but entries for 1825, 1826, 1827 and 1832 read 'No Returns'. In a commentary for the Governor's guidance, Montagu wrote: 'I would also observe that the number of births and deaths are those only returned by ministers of the Church of England, and the former column refers to those only who have been christened, and although the number of deaths must be near the truth, yet the actual number of births has been very much under-stated'. Thus, even though the Tasmanian record of births, deaths and marriages covers a period of 140 years, these early figures cannot be accepted as being very reliable.

Registration Provisions

Franklin's Legislative Council had passed in 1838 *An Act for Registering Births, Deaths and Marriages in the Island of Van Diemen's Land and its Dependencies*. This provided for a Registrar in Hobart with subordinate Deputy Registrars in registration districts throughout the colony; they were to record births and deaths and report them to the Registrar. Ministers celebrating marriage were required to report direct to the Registrar; Deputy Registrars could also officiate and had certain licensing functions. As late as 1867, the Government Statistician complained that accurate death rates could not be compiled because Section 22 of the 1838 Act excluded the registration of the death of any prisoner of the Crown serving under an unexpired sentence of transportation. In 1868, he reported that the death rate could be accepted as correct since 'only one transported offender died during the year'. This would certainly suggest that *total* deaths for the island were not recorded for the years 1839 to 1866.

From 1857 to 1882, the Registrar of the Supreme Court was also Registrar of Births, Deaths and Marriages; from 1882 to 1919, the Government Statistician was the Registrar; from 1919, the Registrar-General's Department operated as a separate entity.

The Registrar-General

The principal Act under which the Registrar-General operates is the *Registration of Births and Deaths Act 1895*, as amended, which provides for District Registrars and the appointment of a Registrar-General to be responsible

for the maintenance of central registers; in essence, the regional approach of the 1838 Act is retained. The functions of the Registrar-General in relation to the registration of marriages were last defined in the *Marriage Act* 1942. However, in 1961, the Commonwealth Parliament passed the *Marriage Act* 1961. A few minor provisions (relating mainly to certain extensions of the application of the prohibited degrees) came into operation on the date the Act received the Royal Assent (6 May 1961) and the remainder of the Act came into operation on 1 September 1963. On this date, the Act superseded the marriage laws of all the States but did not affect the essential function of the Registrar-General in the central registration of marriages.

At the Office of the Registrar-General, there is kept a collection of all registrations made since 1839, as well as church records for earlier periods.

Summary of Principal Statistics

The principal numbers and rates relating to vital statistics in Tasmania for recent years are given in the following table:

Summary of Vital Statistics

Year	Number of—				Rate per 1,000 of Mean Population			Infant Mortality Deaths Under One Year per 1,000 Live Births
	Marriages	Live Births	Deaths	Infant Deaths (a)	Marriages	Live Births	Deaths	
1960	2,713	8,853	2,670	169	7.82	25.52	7.70	19.1
1961	2,677	8,982	2,789	151	7.57	25.40	7.89	16.8
1962	2,485	8,894	2,870	184	6.99	25.01	8.07	20.7
1963	2,579	8,530	2,818	153	7.15	23.66	7.82	17.9
1964	2,869	8,252	3,174	166	7.87	22.64	8.71	20.1
1965	2,888	7,535	3,043	125	7.85	20.48	8.27	16.6
1966	2,946	7,401	3,159	108	7.93	19.91	8.50	14.6
1967	3,213	7,547	3,228	130	8.53	20.04	8.57	17.2
1968	3,426	8,317	3,284	143	8.96	21.76	8.59	17.2
1969	3,532	8,445	3,309	139	9.09	21.73	8.51	16.5
1970	3,535	8,185	3,174	116	9.00	20.83	8.08	14.2

(a) Deaths under one year; included also in total deaths.

Crude Rate Comparisons

The rates per 1,000 of mean population for births, deaths and marriages are referred to as *crude* rates. It will be seen, in regard to marriages, that not *all* the population is 'at risk', children and those already married being obvious excluded examples. Similarly, births are clearly events related to certain fertile age groups of women and not to the total population; births also are directly related to the number of married persons and to the age structure of the married proportion of the community. Finally, deaths have a definite relationship with the numbers of each sex and the age structure of the community. Crude rates are valid measures of comparison in the short term only.

Subject to this limitation, the following Tasmanian historical comparisons exist as from 1880:

1. Crude Marriage Rate: highest 10.51 (1946); lowest 5.50 (1895 and 1896).
2. Crude Birth Rate: highest 36.63 (1884); lowest 19.39 (1935).
3. Crude Death Rate: highest 17.41 (1883); lowest 7.70 (1960).

It is probably significant that 1946 was the year of rapid demobilisation after World War II and that a similar marriage trend was recorded for 1919 and 1920 after World War I. As to the minima for marriage and birth rates, the 1890s and 1930s were decades characterised by severe economic depression. The crude birth rate for 1966 (19.91 per 1,000 of mean population) is not far above the State's lowest figure recorded in the 20th century (i.e. 1939 in 1935). There is, of course, no suggestion that 1966 was a year of economic depression and the popularly accepted theory attributes the low figure to deliberate family planning. However, other factors are operative, the principal being the age composition of the female population. Girls born in the immediate post-war period have now entered the ranks of those likely to marry and this has increased the number of potentially fertile women. The crude birth rate for 1970 was 20.83, the previous year's rate being 21.73.

The effect of the post-war increase in births on the number of potentially fertile women may be inferred from the following table:

Pre-War, War-Time and Post-War Female Births

Year	Number	Year	Number	Year	Number
Pre-War—		War-Time—		Post-War—	
1934	2,127	1940	2,425	1946	3,287
1935	2,211	1941	2,574	1947	3,517
1936	2,226	1942	2,612	1948	3,452
1937	2,359	1943	2,677	1949	3,532
1938	2,366	1944	2,503	1950	3,490
1939	2,409	1945	2,882	1951 (a) ..	3,553
				1952	3,790

(a) Survivors in 1972 are females aged 21 years.

Review of Infant Mortality

Infant mortality relates to the number of deaths *under one year* and the rate is expressed as the number of such deaths per 1,000 live births. It follows that comparisons over long periods of time are valid and not affected by the limitations attached to crude rates. In the following record of infant mortality, the drop in rates has been dramatic with 1970 showing the lowest rate yet experienced.

Infant Mortality Rate (Deaths under One Year Per 1,000 Live Births)
Selected Years from 1880

Year	Rate	Year	Rate	Year	Rate
1880	112.3	1920	65.5	1960	19.1
1890	105.6	1930	50.6	1968	17.2
1900	80.0	1940	35.2	1969	16.5
1910	101.7	1950	23.8	1970	14.2

The peak year since 1880 was 1883 with a rate of 124.0. In the period 1880-1910, the annual infant mortality rate exceeded 100 on fourteen occasions. By way of contrast, the rate in 1970 reached a *record minimum* of 14.2.

At the turn of the century, 20 to 25 per cent of all deaths were those of infants under one year. The rapid fall in infant mortality rates had a marked effect on the crude death rates as infant deaths are a component part of total deaths. Infant mortality has fallen largely due to advances in medical science enabling the control of disease and the development of techniques to reduce perinatal deaths as well as improvements in child care and nutrition.

Marriages

The following table summarises the number of marriages and the crude marriage rate since 1880:

Marriages and Crude Marriage Rates, Selected Years from 1880

Year	Marriages		Year	Marriages	
	Number	Crude Rates (a)		Number	Crude Rates (a)
1880 ..	840	7.39	1940 ..	2,476	10.27
1890 ..	954	6.66	1950 ..	2,560	9.18
1900 ..	1,332	7.72	1960 ..	2,713	7.82
1910 ..	1,493	7.82	1968 ..	3,426	8.96
1920 ..	1,999	9.50	1969 ..	3,532	9.09
1930 ..	1,450	6.56	1970 ..	3,535	9.00

(a) Number of marriages per 1,000 of mean population.

A feature of recent years has been the increase in the proportion of marriages which involve minors as shown in the following table:

Marriages of Minors

Year	Age in Years						Total Minors	
	15	16	17	18	19	20	Number	Percentage of all Marriages (a)

BRIDEGROOMS

1965 .. ..	..	..	5	131	176	249	561	19.43
1966 .. ..	..	..	3	103	239	241	586	19.89
1967 .. ..	..	1	3	107	220	329	660	20.54
1968 .. ..	..	..	8	120	215	317	660	19.26
1969 .. ..	..	..	5	130	214	309	658	18.63
1970 .. ..	..	..	6	160	235	348	749	21.19

BRIDES

1965	3	105	253	370	401	382	1,514	52.42
1966	2	128	189	350	448	425	1,542	52.34
1967	2	102	232	354	444	516	1,650	51.35
1968	3	119	234	384	482	559	1,781	51.98
1969	2	96	236	396	521	517	1,768	50.06
1970	2	111	269	425	541	505	1,853	52.42

(a) Includes marriages involving adults.

The next table analyses the ages of all bridegrooms and brides contracting marriages:

Age of Bridegrooms and Brides, 1970

Age (Years)	Bridegrooms		Brides	
	Number	Per Cent of Total	Number	Per Cent of Total
Under 20	401	11.34	1,348	38.13
20-24	2,012	56.92	1,608	45.49
25-29	595	16.83	259	7.33
30-34	195	5.52	83	2.35
35-39	76	2.15	63	1.78
40-44	70	1.98	51	1.44
45-49	49	1.39	28	0.79
50-54	44	1.24	31	0.88
55-59	38	1.07	31	0.88
60-64	25	0.71	21	0.59
65 and Over	30	0.85	12	0.34
Total	3,535	100.00	3,535	100.00

The following table gives the average age of brides and bridegrooms in recent years:

**Average Age of Bridegrooms and Brides
(Years)**

Particulars	1965	1966	1967	1968	1969	1970
Average Age of Bridegrooms—						
Bachelors	24.01	24.44	24.33	24.06	24.10	23.85
Widowers	55.40	57.55	56.29	58.07	54.85	56.87
Divorcees	40.60	40.87	41.70	40.73	40.47	39.75
All Bridegrooms	25.99	26.88	26.13	25.97	25.79	25.81
Average Age of Brides—						
Spinsters	21.05	21.50	21.39	21.36	21.36	21.38
Widows	49.86	51.59	48.57	50.47	48.23	49.03
Divorcees	36.83	38.84	36.42	37.35	37.27	35.47
All Brides	22.82	23.84	23.14	23.12	23.03	22.96

In the next table, the conjugal condition of persons marrying is shown for a six-year period:

Conjugal Condition of Persons Marrying

Year	Bridegrooms			Brides			Total Marriages
	Bachelors	Widowers	Divorced	Spinsters	Widows	Divorced	
1965 ..	2,638	106	144	2,643	96	149	2,888
1966 ..	2,636	125	185	2,634	117	195	2,946
1967 ..	2,952	85	176	2,930	114	169	3,213
1968 ..	3,138	99	189	3,126	118	182	3,426
1969 ..	3,252	96	184	3,234	103	195	3,532
1970 ..	3,202	95	238	3,236	101	198	3,535

The numbers of marriages performed according to the rites of the principal religious denominations and of civil marriages contracted before Registrars are shown for recent years. Slightly more than eleven per cent of all marriages since 1964 have been civil marriages contracted before Registrars. In 1970 the figure reached 12.5 per cent of all marriages solemnised.

Marriages, Religious and Civil

Particulars of Celebration	1965	1966	1967	1968	1969	1970
Religious Rites—						
Church of England	1,089	1,097	1,299	1,433	1,483	1,431
Catholic	641	652	690	732	759	738
Presbyterian	143	141	147	144	148	160
Methodist	381	416	434	417	444	477
Congregational	49	47	44	39	52	45
Baptist	98	79	83	91	90	97
Churches of Christ	21	19	20	16	25	23
Salvation Army	20	17	19	32	25	23
Seventh Day Adventist ..	3	11	9	14	12	7
Other	86	92	83	83	80	90
Civil Ceremonies (a)	357	375	385	425	414	444
Total	2,888	2,946	3,213	3,426	3,532	3,535

(a) Marriages contracted before Registrars.

Divorce

Divorce in Tasmania was provided for under the *Matrimonial Causes Act* 1860, as amended. However, as from 1 February 1961, Australia came under a uniform divorce law, the *Matrimonial Causes Act* 1959 of the Commonwealth Parliament having come into effect on that date.

In 1970, dissolutions of marriage represented 12.05 per cent of the number of marriages contracted for that year (426 dissolutions against 3,535 marriages). The increase in the number of annual dissolutions is shown in the historical table which follows:

Dissolutions of Marriage Granted, (a) Summary from 1881

Decade Ending—	Maximum in Decade		Minimum in Decade	
	Year	Number	Year	Number
1890	1886	6	1884	..
1900	1894	6	1896	3
1910	1909	13	1904	2
1920	1920	18	1916	2
1930	1928	55	1924	20
1940	1938	109	1937	30
1950	1949	266	1942	83
1960	1954	233	1958	176
1970	1970	426	1964	230

(a) Includes nullities of marriage and judicial separations.

The following table gives the number of petitions filed by husbands and wives respectively, and the number of dissolutions of marriage during the last six years. Every decree of dissolution of marriage is, in the first instance, a decree *nisi* and is normally made absolute after a period of three months.

Petitions Filed and Dissolutions Granted

Particulars	1965	1966	1967	1968	1969	1970
Petitions for Dissolution (a) Filed						
By—						
Husband	146	156	151	198	202	224
Wife	185	201	169	210	227	279
Total Petitions ..	331	357	320	408	429	503
Dissolutions (a) Granted on Petition of—						
Husband	131	142	96	154	159	187
Wife	149	177	152	149	172	239
Total Dissolutions ..	280	319	248	303	331	426

(a) Includes nullities of marriage and judicial separations.

The next table deals with petitions filed:

Petitions Filed, 1970

Petition For	Petitioner		Total
	Husband	Wife	
Dissolution	223	277	500
Nullity	1	2	3
Total	224	279	503

The table that follows analyses the grounds on which dissolutions were granted:

Dissolutions (a) Granted According to Grounds, 1970

Grounds	Petitioner		Total
	Husband	Wife	
Single Ground—			
Desertion	72	74	146
Adultery	74	73	147
Separation	34	59	93
Cruelty .. .. .	..	13	13
Drunkenness	1	7	8
Other .. .. .	..	3	3
Dual Grounds—			
Desertion and Adultery	1	1	2
Desertion and Separation	4	3	7
Cruelty and Drunkenness	1	3	4
Other .. .. .	..	3	3
Total	187	239	426

(a) Includes nullities of marriage and judicial separations.

The more frequent grounds for the granting of dissolutions are:

Dissolutions (a) Granted According to Principal Grounds

Grounds	1965	1966	1967	1968	1969	1970
On Petition of Husband—						
Adultery	30	33	18	49	61	74
Desertion	61	69	44	59	74	72
Separation	27	27	24	32	17	34
Other	13	13	10	14	7	7
On Petition of Wife—						
Adultery	27	25	23	36	43	73
Desertion	58	72	65	54	70	74
Separation	41	47	38	37	38	59
Other	23	33	26	22	21	33
Total	280	319	248	303	331	426

(a) Includes nullities and judicial separations.

An analysis is made of the ages of the parties in the table below:

Dissolutions of Marriage 1970 (a): Ages of Parties at time of Dissolution

Age of Husband (Years)	Age of Wife (Years)						Total Husbands
	Under 21	21-29	30-39	40-49	50-59	60 and over	
Under 21 .. .. .	..	..	..	..	..	..	..
21-29	5	84	1	..	..	..	90
30-39 .. .. .	..	46	98	..	..	..	144
40-49 .. .. .	..	1	43	63	9	..	116
50-59 .. .. .	..	..	3	27	30	..	60
60 and Over .. .. .	..	..	..	2	8	5	15
Not Stated .. .. .	..	1	..	..	..	..	1
Total Wives ..	5	132	145	92	47	5	426

(a) Includes nullities of marriage and judicial separations.

The duration of marriage and issue are analysed below:

Dissolutions of Marriage, 1970 (a): Duration of Marriage and Issue

Duration of Marriage (Years)	Dissolutions of Marriages with—						Total Marriages Dissolved	Total Number of Children (b)
	No Children	1 Child	2 Children	3 Children	4 Children	5 or More Children		
0- 4 ..	25	14	2	..	..	..	41	18
5- 9 ..	23	31	32	12	4	..	102	147
10-14 ..	9	19	26	24	12	4	94	212
15-19 ..	9	9	21	21	9	3	72	167
20-24 ..	12	11	9	9	6	8	55	128
25-29 ..	13	8	6	2	1	2	32	40
30-34 ..	16	2	2	1	..	..	21	9
35-39 ..	5	1	..	..	..	..	6	1
40-44 ..	1	..	..	..	..	..	1	..
45 and Over	2	..	..	..	..	..	2	..
Total Dissolutions	115	95	98	69	32	17	426	..
Total Children (b) ..	..	95	196	207	128	96	..	722

(a) Includes nullities of marriage and judicial separations.

(b) Under 21 years of age.

Births

The following table summarises births and crude birth rates from 1880:

Number of Births and Crude Birth Rates, Selected Years from 1880

Year	Births		Year	Births	
	Number	Per 1,000 of Mean Population		Number	Per 1,000 of Mean Population
1880 ..	3,739	32.90	1930 ..	4,785	21.66
1885 ..	4,637	36.29	1935 ..	4,456	19.39
1890 ..	4,813	33.60	1940 ..	4,994	20.71
1895 ..	4,790	31.16	1945 ..	5,785	23.27
1900 ..	4,864	28.18	1950 ..	7,242	25.96
1905 ..	5,257	28.50	1955 ..	8,089	25.63
1910 ..	5,586	29.25	1960 ..	8,853	25.52
1915 ..	5,845	29.78	1965 ..	7,535	20.48
1920 ..	5,740	27.29	1969 ..	8,445	21.73
1925 ..	5,218	24.21	1970 ..	8,185	20.83

The next table shows, for a six-year period, the number of births and the age groups of the mothers:

Number of Births Classified According to Age of Mother, and Crude Birth Rates

Age Group of Mothers (Years)	1965	1966	1967	1968	1969	1970
10-14	6	1	6	7	1	6
15-19	1,074	1,113	1,091	1,163	1,201	1,175
20-24	2,632	2,586	2,749	3,206	3,259	3,127
25-29	2,039	2,000	2,064	2,272	2,346	2,328
30-34	1,016	980	997	1,033	1,037	999
35-39	572	541	471	468	464	420
40-44	186	168	159	160	125	120
45 and Over ..	10	12	10	8	12	10
Total ..	7,535	7,401	7,547	8,317	8,445	8,185
Crude Birth Rate (a)	20.48	19.91	20.04	21.76	21.73	20.83

(a) Births per 1,000 of mean population.

One observation of interest is that births of males, in total, usually exceed those of females. The next table shows births by sex and indicates masculinity:

Births by Sex and Masculinity

Particulars	1965	1966	1967	1968	1969	1970
Births of—						
Males	3,876	3,753	3,870	4,288	4,337	4,232
Females	3,659	3,648	3,677	4,029	4,108	3,953
Total ..	7,535	7,401	7,547	8,317	8,445	8,185
Masculinity (a) ..	105.93	102.88	105.25	106.43	105.57	107.00

(a) Number of male births per 100 female births.

In the following table, births are analysed by sex and by the age of the mother and classified as nuptial or ex-nuptial:

Births by Sex, Age of Mother and Nuptial State, 1970

Age Group of Mothers (Years)	Nuptial Births		Ex-Nuptial Births		All Births		
	Male	Female	Male	Female	Male	Female	Total
10-14 .. .. .	..	..	3	3	3	3	6
15-19	475	410	158	132	633	542	1,175
20-24	1,470	1,457	115	85	1,585	1,542	3,127
25-29	1,141	1,091	53	43	1,194	1,134	2,328
30-34	510	462	15	12	525	474	999
35-39	205	192	14	9	219	201	420
40-44	60	52	6	2	66	54	120
45 and Over	7	3	..	..	7	3	10
Total	3,868	3,667	364	286	4,232	3,953	8,185

The table that follows summarises, for a six-year period, births according to whether the child was first-born or the issue of a subsequent birth:

Births of First Born and Subsequent Births; Nuptial State of Mothers

Classification of Births	1965	1966	1967	1968	1969	1970
Nuptial—						
First Born (a) ..	2,211	2,234	2,337	2,721	2,731	2,641
Subsequent Birth ..	4,853	4,643	4,648	4,939	5,067	4,894
Ex-Nuptial ..	471	524	562	657	647	650
Total	7,535	7,401	7,547	8,317	8,445	8,185
Ex-Nuptial Births as Percentage of Total Births	6.3	7.1	7.4	7.9	7.7	7.9

(a) In case of multiple births with no previous issue, first child born alive is recorded as 'First Born' and subsequent child or children as 'Subsequent Birth'.

It should be noted that 'First Born' in the previous tables refers specifically to the union from which the child originates; thus a mother married for the second time could be credited with a 'First Born' child despite issue from the previous union.

Birth Rates

The *crude birth rate* is expressed as the number of births per 1,000 of mean population; this is obviously an unsatisfactory measure since births are events strictly related to the number of women in the fertile age groups. A more satisfactory index is the *fertility rate*, expressed as the number of births per 1,000 women aged 15-44 years. However, there are profound differences between the relative fertility of various age groups and a further refinement is the calculation of *age-specific birth rates*. The following table shows age-specific birth rates, the fertility rate, and crude birth rate for a six-year period.

Birth and Fertility Rates

Particulars	1965	1966	1967	1968	1969	1970
AGE SPECIFIC BIRTH RATES (a)						
Age Group of Mother (Years)—						
10-14	0.3	0.1	0.3	0.4	0.1	0.3
15-19	62.9	64.7	62.9	65.8	66.7	64.3
20-24	209.9	203.6	199.9	217.7	210.1	190.7
25-29	193.1	176.9	180.1	196.4	196.3	189.2
30-34	102.6	95.9	95.5	96.8	95.1	89.8
35-39	52.6	49.3	43.6	44.0	43.9	40.8
40-44	16.1	14.6	14.0	14.2	11.2	10.9
45-49	1.0	1.2	0.9	0.7	1.1	0.9
FERTILITY RATE (b)						
Fertility Rate (b) ..	104	100	100	109	108	103
CRUDE BIRTH RATE (c)						
Crude Birth Rate (c)	20.5	19.9	20.0	21.8	21.7	20.8

(a) Number of births per 1,000 women in age groups shown.

(b) Number of births per 1,000 women aged 15-44 years.

(c) Number of births per 1,000 of mean population.

From the data in the table, it is apparent that the two principal factors determining the number of births in any year are:

- (i) the age distribution of women within the fertile age groups;
- (ii) the relative fertility of women in each age group (as indicated by age-specific birth rates).

Infant Mortality

Infant mortality relates to children dying within one year of birth. The table that follows analyses such deaths in further detail and shows that the greatest mortality rate is associated with infants in their first day of life. To obtain a correct picture of relative risk, it should be noted that deaths in the 'one day and under one week' class are spread over six days; in the 'one week and under four weeks' class spread over 21 days; and in the final class, spread over 337 days.

Infant Mortality: Number of Deaths and Mortality Rates at Specific Ages

Year	Infant Deaths		Mortality Rate (a) at Age Specified—			
	Number	Per 1,000 Live Births	Under 1 Day	1 Day and under 1 Week	1 Week and under 4 Wks	4 Weeks and under 12 Mths
1965 ..	125	16.6	6	4	1	6
1966 ..	108	14.6	5	4	1	4
1967 ..	130	17.2	5	5	1	6
1968 ..	143	17.2	6	4	1	6
1969 ..	139	16.5	5	4	2	6
1970 ..	116	14.2	4	4	1	5

(a) Infant deaths per 1,000 live births; rates have been rounded to whole numbers.

Infant Mortality (a): Tasmania-Australia Comparison

State/Country	1965	1966	1967	1968	1969	1970
Tasmania	16.6	14.6	17.2	17.2	16.5	14.2
Australia	18.5	18.2	18.3	17.8	17.9	17.9

(a) Infant deaths per 1,000 live births.

To put current infant mortality rates in their true perspective, it is necessary to refer to rates prevailing at the turn of the century when 100 infant deaths per 1,000 live births was not an uncommon experience. This is discussed in an earlier section headed 'Crude Rate Comparisons'.

Causes of Infant Deaths

The next table shows the causes of infant deaths during the six years 1962 to 1967, with specification of groups of items and single items:

Infant Mortality: Causes of Death Under One Year

Cause	1962	1963	1964	1965	1966	1967
057 Meningococcal Infections .. ..	..	..	..	..	1	..
001-056 } Other General Diseases (a)	2	4	2	2	1	5
058-326 } Meningitis	2	..	2	1	..	4
340 } Other Diseases of the Nervous System	1	1	2	1	1	1
330-334 } Diseases of the Circulatory System ..	..	1	..	..	..	..
341-398 } Acute Upper Respiratory Infections	..	..	..	..	..	1
400-468 } Influenza .. ..	..	..	1	..	..	..
470-475 } Pneumonia	22	22	18	15	13	17
480-483 } Bronchitis	1	1	1	1	1	1
490-493 } Other Diseases, Respiratory System	7	3	6	8	2	4
500-502 } Gastro-Enteritis	2	3	3	2	2	..
510-527 } Other Diseases of the Digestive System	3	3	4	3	3	1
571 } Nephritis and Nephrosis .. ..	..	..	..	..	..	..
530-570 } Other Diseases of the Genito-Urinary	1	1	1	..	..	1
572-587 } System .. ..	..	1	..	..	..	..
590-594 } Diseases of the Skin .. ..	..	1	..	..	..	..
600-637 } Diseases of the Bones and Organs of	..	..	..	..	..	..
690-716 } Movement .. ..	..	..	..	..	..	..
720-749 } Congenital Malformations	50	35	28	27	14	19
750-759 } Birth Injuries, Asphyxia and Infections	..	..	..	..	..	..
760-769 } of the New-Born	44	34	51	37	26	38
770-776 } Other Diseases of Early Infancy ..	44	38	40	24	37	35
780-795 } Ill-Defined Conditions .. ..	..	..	..	..	..	..
800-999 } External Causes	5	6	7	4	7	3
Total	184	153	166	125	108	130

(a) Principally infective and parasitic diseases.

All death statistics prior to 1968, including those relating to infant mortality, have been compiled in accordance with the Seventh Revision (1955) of the International Classification of Diseases (World Health Organisation).

The following table has been compiled on the basis of the Eighth Revision (1965) of the International Classification of Diseases (World Health Organisation) and is not fully comparable with the table above.

Infant Mortality: Causes of Death Under One Year

Cause		1968	1969	1970
009	Diarrhoeal Diseases	4	3	1
036	Meningococcal Infection	1	..	..
000-008	Other General Diseases (a)	3	..	2
010-035				
037-315	Meningitis	1	..	1
320	Other Diseases of the Nervous System and Sense Organs ..	1	..	1
321-389	Diseases of the Circulatory System	3	1	..
390-458	Acute Respiratory Infections (except Influenza)	3	5	3
460-466	Influenza	3	..	..
470-474	Pneumonia	28	39	27
480-486	Bronchitis, Emphysema and Asthma .. .. .	..	..	..
490-493	Other Diseases of Respiratory System .. .. .	..	..	1
500-519	Diseases of the Digestive System .. .. .	..	2	3
520-577	Diseases of Genito-Urinary System .. .. .	..	..	..
580-629	Diseases of Skin and Subcutaneous Tissue .. .. .	..	..	..
680-709	Diseases of Musculoskeletal System and Connective Tissue ..	1	..	..
710-738	Congenital Anomalies	23	20	18
740-759	Certain Maternal Conditions	10	3	7
760-763	Birth Injury, Difficult Labour and Other Anoxic and Hypoxic	23	22	22
764-768	Conditions			
772, 776	Other Causes of Perinatal Mortality	36	37	28
769-771				
773-775	Symptoms and Ill-Defined Conditions	1	..	..
777-779	Accidents, Poisonings and Violence	2	7	2
780-796				
800-999				
Total		143	139	116

(a) Principally infective and parasitic diseases.

Deaths

The following table summarises the number of deaths and crude death rates from 1880 to 1970. The table indicates a continual fall, apart from minor variations, from a death rate of 16.12 (1880) to 8.08 (1970).

Number of Deaths and Crude Death Rates, Selected Years from 1880

Year	Deaths		Year	Deaths	
	Number	Rate (a)		Number	Rate (a)
1880 ..	1,832	16.12	1930 ..	1,948	8.82
1885 ..	2,036	15.94	1935 ..	2,353	10.24
1890 ..	2,118	14.79	1940 ..	2,387	9.90
1895 ..	1,811	11.78	1945 ..	2,413	9.71
1900 ..	1,903	11.02	1950 ..	2,466	8.85
1905 ..	1,844	10.00	1955 ..	2,489	7.89
1910 ..	2,120	11.10	1960 ..	2,670	7.70
1915 ..	2,015	10.27	1965 ..	3,043	8.27
1920 ..	2,036	9.68	1969 ..	3,309	8.51
1925 ..	1,996	9.26	1970 ..	3,174	8.08

(a) Per 1,000 of mean population.

A marked difference exists between male and female crude death rates:

Male and Female Deaths and Crude Rates

Year	Number of Deaths			Deaths Per 1,000 of Mean Population			Ratio of Male to Female Crude Death Rates
	Males	Females	Persons	Males	Females	Persons	
1960	1,546	1,124	2,670	8.79	6.57	7.70	1.338
1961	1,601	1,188	2,789	8.96	6.79	7.89	1.320
1962	1,622	1,248	2,870	9.01	7.10	8.07	1.269
1963	1,601	1,217	2,818	8.75	6.83	7.82	1.281
1964	1,797	1,377	3,174	9.76	7.64	8.71	1.277
1965	1,716	1,327	3,043	9.24	7.29	8.27	1.267
1966	1,726	1,433	3,159	9.21	7.79	8.50	1.182
1967	1,790	1,438	3,228	9.42	7.71	8.57	1.222
1968	1,906	1,378	3,284	9.89	7.27	8.59	1.360
1969	1,876	1,433	3,309	9.57	7.44	8.51	1.286
1970	1,785	1,389	3,174	9.00	7.14	8.08	1.285

In the following tables the number of deaths and the crude death rates for Tasmania are compared with those of the other States.

Australian States: Number of Deaths (a)

Year	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	Australia (b)
1966 ..	40,546	28,673	14,861	9,323	6,772	3,159	103,929
1967 ..	39,613	28,373	14,736	9,071	6,779	3,228	102,703
1968 ..	41,803	29,967	16,078	9,916	7,468	3,284	109,547
1969 ..	40,665	28,976	15,786	9,337	7,350	3,309	106,496
1970 ..	43,601	30,335	17,055	10,138	7,543	3,174	113,048

(a) Includes deaths of Aborigines from 1967.

(b) Includes A.C.T. and N.T.

Australian States: Crude Death Rates, Census Years (a)

State	1921	1933	1947	1954	1961	1966	1970 (b)
N.S.W. ..	9.50	8.58	9.53	9.46	8.95	9.57	9.53
Victoria ..	10.52	9.59	10.44	9.20	8.37	8.90	8.79
Queensland ..	9.37	8.83	9.15	8.64	8.42	8.93	9.47
S.A. ..	10.02	8.44	9.62	9.02	8.06	8.54	8.70
W.A. ..	10.42	8.64	9.39	8.38	7.77	8.09	7.67
Tasmania ..	10.30	9.60	9.17	8.67	7.89	8.50	8.08
Australia (c) ..	9.91	8.92	9.69	9.10	8.47	8.99	8.99

(a) Deaths per 1,000 of mean population.

(b) Non-Census year. Aboriginal deaths included (repeal of Section 127 of Constitution).

(c) Includes A.C.T. and N.T.

Death Rates for Specific Age Groups

Previously in this chapter, crude death rates were described as unsuitable for comparisons over long periods of time due to changes in the age structure of the community. In the following table, this difficulty is overcome by calculating death rates for specific age groups. The method employed is to obtain the average annual deaths for specific age groups over those three-year periods which are broken into equal parts by a census of population (e.g. 30 June 1947 is the census date for a calculation of rates in the three years, 1946-1948 inclusive). Rates can then be calculated by comparing the average number of deaths for each group with the number of persons in each group as revealed by the census. In theory, the calculation of such rates need not be restricted to periods for which a census date forms the midpoint but the advantage of accepting such restriction lies in the accuracy of the age distribution obtained from the census. In the table, three-year periods have been selected appropriate to the censuses of 1947 and 1966 (the data relate to the Tasmanian population):

Death Rates for Specific Age Groups (a)

Age Group (Years)	Males		Females		Persons	
	1946-48	1965-67	1946-48	1965-67	1946-48	1965-67
0-4	9.13	4.08	7.24	3.47	8.21	3.78
5-9	1.15	0.47	0.69	0.39	0.92	0.43
10-14	0.67	0.61	0.39	0.39	0.53	0.50
15-19	1.62	1.73	1.46	0.56	1.54	1.15
20-24	2.10	1.98	1.79	0.68	1.94	1.34
25-29	2.12	1.50	1.74	0.71	1.93	1.11
30-34	2.27	2.07	1.90	1.08	2.09	1.59
35-39	3.10	2.03	2.59	1.34	2.85	1.70
40-44	3.93	3.64	3.51	2.66	3.73	3.16
45-49	5.88	6.32	4.66	3.65	5.28	5.00
50-54	9.52	9.53	7.84	4.81	8.65	7.23
55-59	16.98	16.78	10.03	8.54	13.44	12.79
60-64	23.87	27.85	17.30	13.77	20.53	20.84
65-69	41.82	42.24	27.35	23.15	34.56	31.90
70-74	58.43	69.39	49.47	38.48	53.80	51.29
75-79	103.22	91.37	77.00	68.82	89.78	78.10
80-84	156.64	145.21	123.49	113.78	138.41	126.26
85 and over ..	292.36	235.85	220.32	213.56	250.16	221.83

(a) Rate per 1,000 of the population in the specified age group at census date.

A later section of this chapter is headed 'Expectation of Life and Life Tables'. The theory of constructing life tables can be related to the table above, the major difference being that the former depend on the calculation of differential rates for each year, and not for five-year age groups.

A more comprehensive analysis of the theory of life tables has been published in earlier *Year Books*.

Causes of Death

The Eighth (1965) Revision of the International Classification of Diseases was adopted for use in 1968 but has not materially affected comparability with details based on the Seventh Revision (1955). The following table shows causes of deaths, the rates per 100,000 of mean population and the proportion of deaths from each cause.

Causes of Death: Numbers and Rates, 1970

Cause of Death	Detailed List Numbers	Number of Deaths	Rate per 100,000 of Mean Population	Percentage of Total Deaths
0-4 (a)	(a)	4	1	0.1
5. Tuberculosis of respiratory system	010-012	7	1	0.2
6. Other tuberculosis including late effects ..	013-019	5	1	0.2
7-16 (b)	(b)	..	..	..
17. Syphilis and its sequelae	090-097	1	..	..
18. All other infective and parasitic diseases ..	(c)	9	2	0.3
19. Malignant neoplasms—				
Digestive organs and peritoneum	150-159	157	40	4.9
Trachea, bronchus and lung	162	82	21	2.6
Breast	174	43	11	1.4
Genito-Urinary organs	180-189	85	22	2.7
Leukaemia	204-207	15	4	0.5
Other malignant and lymphatic neoplasms	(d)	100	25	3.1
20. Benign and unspecified neoplasms	210-239	3	1	0.1
21. Diabetes mellitus	250	69	18	2.2
22. Nutritional deficiencies	260-269	1	..	..
23. Anaemias	280-285	4	1	0.1
24. Meningitis	320	1	..	..
25. Active rheumatic fever	390-392	..	..	..
26. Chronic rheumatic heart disease	393-398	39	10	1.2
27. Hypertensive disease	400-404	49	13	1.5
28. Ischaemic heart disease	410-414	934	238	29.4
29. Other forms of heart disease	420-429	113	29	3.6
30. Cerebrovascular disease	430-438	383	97	12.1
31. Influenza	470-474	18	5	0.6
32. Pneumonia	480-486	112	28	3.5
33. Bronchitis, emphysema and asthma	490-493	156	40	4.9
34. Peptic ulcer	531-533	15	4	0.5
35. Appendicitis	540-543	2	1	0.1
36. Intestinal obstruction and hernia	{ 550-553	15	4	0.5
	560	12	3	0.4
37. Cirrhosis of liver	571	8	2	0.2
38. Nephritis and Nephrosis	580-584	35	9	1.1
39. Hyperplasia of prostate	600	10	3	0.3
40. Abortion	640-645	1	..	..
41. { Other complications of pregnancy, child-	630-639	..	..	..
birth and the puerperium. Delivery without				
mention of complication	650-678	2	1	0.1
42. Congenital anomalies	740-759	31	8	1.0
43. { Birth injury, difficult labour and other anoxic	764-768	5	1	0.2
and hypoxic conditions	772-776	18	5	0.6
	760-763	7	1	0.2
	769-771	13	3	0.4
	773-775	1	1	0.1
	777-779	13	3	0.4
	780-796	12	3	0.4
44. Other causes of perinatal mortality	Remainder of 240-738	294	74	9.1
45. Symptoms and other ill-defined conditions..				
46. All other diseases				
EXTERNAL CAUSE OF INJURY				
47. Motor vehicle accidents	810-823	127	32	4.0
48. All other accidents	{ 800-807	3	1	0.1
	825-949	101	26	3.2
49. Suicide and self-inflicted injuries	950-959	50	13	1.6
50. All other external causes	960-999	9	2	0.3
All Causes .. .. .	..	3,174	808	100.00

(a) 000-009. (See following text for specification of diseases.)

(b) 020, 032, 033, 034, 036, 040-043, 050, 055, 080-084. (See following text for specification of diseases.)

(c) 021-027, 030, 031, 035, 037, 038, 039, 044-046, 051-054, 056, 057, 060-068, 070-079, 085-089, 098-117, 120-136.

(d) 140-149, 160, 161, 163, 170-173, 190-203, 208, 209.

It will be noted that Items 0-4 and 7-16 in the table were not listed individually, few associated deaths having been recorded. The specification of causes reads: (1) Cholera; (2) Typhoid fever; (3) Dysentery, all forms; (4) Enteritis and other diarrhoeal diseases; (7) Plague; (8) Diphtheria; (9) Whooping Cough; (10) Streptococcal sore throat and Scarlet Fever; (11) Meningococcal infection; (12) Acute poliomyelitis; (13) Smallpox; (14) Measles; (15) Typhus and other rickettsial diseases; (16) Malaria. Uncertainty as to diagnosis in earlier periods makes comparison difficult but, at the turn of the century, Whooping Cough, Diphtheria, Typhoid Fever and Scarlet Fever were diseases associated with numerous deaths.

Causes of Death in Age Groups

The previous table showing causes of death makes no reference to age, a complete dissection by age and cause being beyond the scope of a year book. Nevertheless, there is an extremely significant relationship between age and cause of death and the next table indicates, in summary form, their close inter-connection.

For each of the specified causes in the table, two percentages are shown:

- (i) Deaths in a particular age group as a proportion of total deaths from all causes in that age group.
- (ii) Deaths in a particular age group as a proportion of total deaths from the same cause at all ages.

The causes chosen and specified are such that they account, in total, for approximately 75 per cent or more of deaths in most of the given age groups.

Attention is called to 'Accidental and Violent Deaths' (800-999) which account for over 50 per cent of deaths in the age groups from 5-14 years to 25-34 years inclusive. Also noteworthy is the present relative unimportance of 'Infective and Parasitic Diseases' (001-136). The most important group, in a total sense, is 'Diseases of the Heart' (390-398, 400-404, 410-429) followed by 'Malignant Neoplasms—All Forms' (140-209); then 'Cerebrovascular Diseases' (430-438) followed by 'Pneumonia, Bronchitis and Influenza' (470-474, 480-486, 490-493); nevertheless, the inter-connection between age and cause of death is so close that none of these causes needs to be specified for some age groups in the table.

Main Causes of Death (in Age Groups), 1970

Detailed List Numbers	Age Group and Cause of Death	Deaths from Specified Cause			
		In Age Group		At All Ages	
		Number	Per Cent	Number	Per Cent (a)
480-486	Under 1 Year:	116	100.0	..	..
740-759	Pneumonia	27	23.3	112	24.1
776	Congenital anomalies	18	15.5	31	58.1
769	Anoxic and hypoxic conditions ..	15	12.9	15	100.0
760-763	Multiple births	9	7.8	9	100.0
..	Maternal conditions	7	6.0	7	100.0
..	Other causes	40	34.5	..	..
800-999	1-4 years:	25	100.0	..	..
740-759	Accidental and violent deaths ..	10	40.0	290	3.4
480-486	Congenital anomalies	5	20.0	31	16.1
140-209	Pneumonia	2	8.0	112	1.8
490-493	Cancer (all forms) (b)	1	4.0	482	0.2
..	Bronchitis, emphysema, asthma ..	1	4.0	156	0.6
..	Other causes	6	24.0	..	..

Main Causes of Death (in Age Groups), 1970—continued

Detailed List Numbers	Age Group and Cause of Death	Deaths from Specified Cause			
		In Age Group		At All Ages	
		Number	Per Cent	Number	Per Cent (a)
800-999	5-14 years:	41	100.0	..	..
140-209	Accidental and violent deaths ..	23	56.1	290	7.9
480-486	Cancer (all forms) (b) ..	5	12.2	482	1.0
490-493	Pneumonia ..	1	2.4	112	0.9
..	Bronchitis, emphysema, asthma ..	..	..	156	..
..	Other causes ..	12	29.3	..	..
800-999	15-19 years:	52	100.0	..	..
140-209	Accidental and violent deaths ..	46	88.5	290	15.9
..	Cancer (all forms) (b) ..	1	1.9	482	0.2
..	Other causes ..	5	9.6	..	..
800-999	20-24 years:	36	100.0	..	..
140-209	Accidental and violent deaths ..	27	75.0	290	9.3
..	Cancer (all forms) (b) ..	4	11.1	482	0.8
..	Other causes ..	5	13.9	..	..
800-999	25-34 years:	64	100.0	..	..
140-209	Accidental and violent deaths ..	39	60.9	290	13.4
390-398,	Cancer (all forms) (b) ..	9	14.1	482	1.9
400-404,	Diseases of heart ..	2	3.1	1,135	0.2
410-429		14	21.9	..	..
..	Other causes ..	..	..	..	..
390-398,	35-44 years:	104	100.0	..	..
400-404,	Diseases of heart ..	31	29.8	1,135	2.7
410-429		28	26.9	290	9.7
800-999	Accidental and violent deaths ..	16	15.4	482	3.3
140-209	Cancer (all forms) (b) ..	4	3.8	156	2.6
490-493	Bronchitis, emphysema, asthma ..	1	1.0	112	0.9
480-486	Pneumonia ..	24	23.1	..	..
..	Other causes ..	..	..	..	..
390-398,	45-54 years:	254	100.0	..	..
400-404,	Diseases of heart ..	91	35.8	1,135	8.0
410-429		60	23.6	482	12.4
140-209	Cancer (all forms) (b) ..	27	10.6	290	9.3
800-999	Accidental and violent deaths ..	19	7.5	156	12.2
490-493	Bronchitis, emphysema, asthma ..	10	3.9	383	2.6
430-438	Cerebrovascular diseases ..	5	2.0	112	4.5
480-486	Pneumonia ..	42	16.6	..	..
..	Other causes ..	..	..	..	..
390-398,	55-64 years:	509	100.0	..	..
400-404,	Diseases of heart ..	204	40.1	1,135	17.9
410-429		122	24.0	482	25.3
140-209	Cancer (all forms) (b) ..	48	9.4	383	12.5
430-438	Cerebrovascular diseases ..	32	6.3	290	11.0
800-999	Accidental and violent deaths ..	30	5.9	156	19.2
490-493	Bronchitis, emphysema, asthma ..	7	1.4	112	6.3
480-486	Pneumonia ..	66	12.9	..	..
..	Other causes ..	..	..	..	..

Main Causes of Death (in Age Groups), 1970—*continued*

Detailed List Numbers	Age Group and Cause of Death	Deaths from Specified Cause			
		In Age Group		At All Ages	
		Number	Per Cent	Number	Per Cent (a)
390-398	65-74 years:	756	100.0	..	..
400-404, 410-429	Diseases of heart	330	43.7	1,135	29.1
140-209	Cancer (all forms) (b)	125	16.5	482	25.9
430-438	Cerebrovascular diseases ..	93	12.3	383	24.3
490-493	Bronchitis, emphysema, asthma ..	54	7.1	156	34.6
800-999	Accidental and violent deaths ..	18	2.4	290	6.2
480-486	Pneumonia	11	1.5	112	9.8
..	Other causes	125	16.5	..	..
390-398, 400-404, 410-429	75 years and over:	1,217	100.0	..	..
430-438	Diseases of heart	477	39.2	1,135	42.0
140-209	Cerebrovascular diseases ..	220	18.1	383	57.4
440-448	Cancer (all forms) (b)	139	11.4	482	28.8
480-486	Diseases of arteries	78	6.4	101	77.2
490-493	Pneumonia	56	4.6	112	50.0
..	Bronchitis, emphysema, asthma ..	46	3.8	156	29.5
..	Other causes	201	16.5	..	..

(a) Deaths in specified age groups as a percentage of total deaths for a particular cause.

(b) Includes Hodgkin's Disease and the Leukaemias.

Heart Diseases

As the previous table indicates, heart diseases (list items 390-398, 400-404, 410-429) are the greatest single cause of death. In the following record of deaths due to heart diseases, 1950 has been chosen as a start-point since earlier figures are not strictly comparable. It can be seen from the table that heart diseases account for over one-third of the 'Deaths From All Causes'.

Deaths from Heart Diseases (All Causes) (a)

Year	Number of Deaths			Death Rate Per 100,000 of Mean Population	Deaths as a Percentage of Deaths from All Causes
	Males	Females	Persons		
1950	413	304	717	257	29.1
1965	701	458	1,159	315	38.1
1966	656	464	1,120	301	35.5
1967	663	473	1,136	302	35.2
1968	680	493	1,173	307	35.7
1969	701	483	1,184	305	35.8
1970	681	454	1,135	290	35.8

(a) List items 400-416, 420-443 to 1967, 390-398, 400-404, 410-429 from 1968.

Tuberculosis

A development of recent years has been the marked decline in deaths attributed to tuberculosis. In the following table, 1950 has been chosen as the start-point, earlier figures being not strictly comparable due to changes in classification and in the method of determining a single cause of death where multiple causes are shown on the death certificate.

Deaths from Tuberculosis (All Forms) (a)

Year	Number of Deaths			Death Rate Per 100,000 of Mean Population	Deaths as a Percentage of Deaths from All Causes
	Males	Females	Persons		
1950	27	44	71	25	2.9
1965	6	3	9	2	0.3
1966	6	5	11	3	0.3
1967	4	3	7	2	0.2
1968	12	2	14	4	0.4
1969	4	2	6	1	0.2
1970	8	4	12	3	0.4

(a) List items 001-019 to 1967; 010-019 from 1968.

Malignant Neoplasms

In the next table, deaths from 'Malignant Neoplasms including Hodgkin's Disease and the Leukaemias' are summarised:

Deaths from Malignant Neoplasms (All Causes) (a)

Year	Number of Deaths			Death Rate Per 100,000 of Mean Population	Deaths as a Percentage of Deaths from All Causes
	Males	Females	Persons		
1950	159	164	323	115	13.1
1965	246	233	479	130	15.7
1966	251	245	496	133	15.7
1967	302	227	529	140	16.4
1968	273	220	493	129	15.0
1969	282	228	510	131	15.4
1970	253	229	482	123	15.2

(a) List items 140-207 to 1967; 140-209 from 1968.

Lung Cancer

There has been considerable interest recently in lung cancer because of its suspected connection with smoking habits. The following table shows deaths attributed to 'Malignant Neoplasm of Respiratory System' since 1950:

Deaths from Malignant Neoplasm of Respiratory System (a)

Year	Males	Females	Persons	Year	Males	Females	Persons
1950 ..	20	4	24	1963 ..	44	9	53
1956 ..	35	9	44	1964 ..	51	16	67
1957 ..	43	7	50	1965 ..	60	11	71
1958 ..	29	10	39	1966 ..	76	16	92
1959 ..	43	11	54	1967 ..	78	9	87
1960 ..	40	3	43	1968 ..	69	12	81
1961 ..	47	3	50	1969 ..	85	11	96
1962 ..	70	8	78	1970 ..	72	19	91

(a) List items 160-165 to 1967; 160-163 from 1968.

EXPECTATION OF LIFE AND LIFE TABLES

General

Previously, reference was made to the limitations of crude death rates as a measure of mortality. However, a correct measurement of the mortality of the population can be obtained from life tables.

A life table is, in effect, a mathematical model, its starting point being a hypothetical population (say 100,000) of newly-born males or females. Using data for a given period (e.g. single year age distribution of an actual population, deaths at single ages, etc.), the compiler calculates the theoretical number of survivors at each age in the hypothetical population until there are no survivors remaining.

Calculation of Life Expectancy

In the table that follows, l_x is the number of persons surviving at exact age x . From this survivors' table, other measures can then be computed, namely:

- L_x : the average number living between any year x and $x + 1$
- e^o_x : the complete expectation of life (i.e. the average number of years lived after age x by each of a group of persons aged exactly x).

Not only does the l_x column give numbers of survivors at each age but, if accumulated, it gives an approximate measure of the total number of years lived by the life-table population. To obtain a more refined measure of the total number of years lived, it is necessary to accumulate L_x values. These can be obtained by averaging each consecutive pair of l_x values.

Taking the male life table for 1960-62 as an example:

Total of all l_x values (0-105) = 6,841,916 years

Total of all $l_x + 1$ values (1-105) = 6,741,916 years

Therefore, total L_x values (0-105) = 6,791,916 years

According to the table, 100,000 males live a total of 6,791,916 years.

It follows, then, that the complete expectation of life (e^o_x) can be taken as 67.92 years as from birth.

The above calculation shows the derivation of e^o_x where x is 0. The same logic applies to all other ages:

Again taking the male life table as an example:

Total of l_x values (10-105) = 5,865,686 years

Total of all $l_x + 1$ values (11-105) = 5,768,624 years

Therefore, total L_x values (10-105) = 5,817,155 years

According to the table, 97,062 males live a total of a further 5,817,155 years.

It follows then, that each male aged ten has an average life expectancy of a further 59.93 years $\left(\text{i.e. } \frac{5,817,155}{97,062} \right)$

From these examples, it will be seen that e^o_x is simply an average or per capita figure, the two elements involved being the total number of years lived by a given population and the given population itself.

For the sake of brevity in the table, the following usual values have not been given:

d_x ; the number of deaths in the year of age x to $x + 1$ among the l_x persons who enter on that year.

p_x ; the probability of a person aged x living a year.

q_x ; the probability of a person aged x dying within a year.

If required, these values can be computed from the tables as follows:

$$d_x = l_x - l_{x+1}$$

$$p_x = \frac{l_{x+1}}{l_x}$$

$$\text{and } q_x = 1 - p_x$$

Australia: Life Tables, 1960-62
Survivors (l_x) and Complete Expectation of Life (e°_x)
Males

Age x	l_x	e°_x	Age x	l_x	e°_x	Age x	l_x	e°_x
0 ..	100,000	67.92	35 ..	93,931	36.45	70 ..	54,944	9.77
1 ..	97,761	68.46	36 ..	93,749	35.51	71 ..	52,100	9.27
2 ..	97,584	67.59	37 ..	93,554	34.59	72 ..	49,168	8.80
3 ..	97,467	66.67	38 ..	93,343	33.67	73 ..	46,160	8.34
4 ..	97,379	65.73	39 ..	93,112	32.75	74 ..	43,092	7.90
5 ..	97,315	64.77	40 ..	92,859	31.84	75 ..	39,984	7.47
6 ..	97,259	63.81	41 ..	92,580	30.93	76 ..	36,860	7.06
7 ..	97,206	62.84	42 ..	92,274	30.03	77 ..	33,745	6.67
8 ..	97,154	61.87	43 ..	91,938	29.14	78 ..	30,661	6.29
9 ..	97,105	60.91	44 ..	91,569	28.25	79 ..	27,629	5.92
10 ..	97,062	59.93	45 ..	91,165	27.38	80 ..	24,669	5.57
11 ..	97,022	58.96	46 ..	90,723	26.51	81 ..	21,803	5.24
12 ..	96,981	57.98	47 ..	90,238	25.65	82 ..	19,054	4.92
13 ..	96,936	57.01	48 ..	89,705	24.80	83 ..	16,448	4.63
14 ..	96,885	56.04	49 ..	89,118	23.96	84 ..	14,008	4.35
15 ..	96,825	55.07	50 ..	88,473	23.13	85 ..	11,758	4.08
16 ..	96,752	54.11	51 ..	87,762	22.31	86 ..	9,716	3.84
17 ..	96,660	53.16	52 ..	86,979	21.51	87 ..	7,897	3.61
18 ..	96,541	52.23	53 ..	86,119	20.72	88 ..	6,306	3.40
19 ..	96,384	51.31	54 ..	85,175	19.94	89 ..	4,943	3.20
20 ..	96,215	50.40	55 ..	84,142	19.18	90 ..	3,800	3.02
21 ..	96,049	49.49	56 ..	83,015	18.43	91 ..	2,862	2.85
22 ..	95,886	48.57	57 ..	81,790	17.70	92 ..	2,111	2.70
23 ..	95,728	47.65	58 ..	80,459	16.99	93 ..	1,524	2.55
24 ..	95,577	46.73	59 ..	79,017	16.29	94 ..	1,076	2.42
25 ..	95,432	45.80	60 ..	77,456	15.60	95 ..	742	2.29
26 ..	95,292	44.86	61 ..	75,771	14.94	96 ..	500	2.17
27 ..	95,154	43.93	62 ..	73,954	14.29	97 ..	329	2.06
28 ..	95,014	42.99	63 ..	72,002	13.67	98 ..	211	1.96
29 ..	94,871	42.06	64 ..	69,915	13.06	99 ..	132	1.86
30 ..	94,726	41.12	65 ..	67,699	12.47	100 ..	80	..
31 ..	94,577	40.18	66 ..	65,361	11.90	101 ..	47	..
32 ..	94,425	39.25	67 ..	62,910	11.34	102 ..	27	..
33 ..	94,267	38.31	68 ..	60,353	10.80	103 ..	15	..
34 ..	94,103	37.38	69 ..	57,696	10.28	104 ..	8	..

Australia: Life Tables, 1960-62
Survivors (l_x) and Complete Expectation of Life (e°_x)
Females

Age x	l_x	e°_x	Age x	l_x	e°_x	Age x	l_x	e°_x
0 ..	100,000	74.18	35 ..	96,183	41.70	70 ..	72,505	12.19
1 ..	98,243	74.49	36 ..	96,065	40.75	71 ..	70,378	11.54
2 ..	98,074	73.62	37 ..	95,936	39.81	72 ..	68,079	10.92
3 ..	97,974	72.70	38 ..	95,797	38.86	73 ..	65,600	10.31
4 ..	97,911	71.74	39 ..	95,646	37.92	74 ..	62,939	9.72
5 ..	97,854	70.78	40 ..	95,481	36.99	75 ..	60,096	9.16
6 ..	97,805	69.82	41 ..	95,302	36.06	76 ..	57,077	8.62
7 ..	97,762	68.85	42 ..	95,107	35.13	77 ..	53,888	8.10
8 ..	97,725	67.88	43 ..	94,893	34.21	78 ..	50,543	7.60
9 ..	97,693	66.90	44 ..	94,658	33.29	79 ..	47,058	7.13
10 ..	97,664	65.92	45 ..	94,400	32.38	80 ..	43,453	6.68
11 ..	97,637	64.94	46 ..	94,117	31.48	81 ..	39,756	6.25
12 ..	97,611	63.95	47 ..	93,809	30.58	82 ..	36,006	5.85
13 ..	97,584	62.97	48 ..	93,474	29.69	83 ..	32,247	5.47
14 ..	97,556	61.99	49 ..	93,109	28.80	84 ..	28,530	5.12
15 ..	97,525	61.01	50 ..	92,713	27.92	85 ..	24,909	4.79
16 ..	97,488	60.03	51 ..	92,283	27.05	86 ..	21,440	4.49
17 ..	97,443	59.06	52 ..	91,817	26.18	87 ..	18,174	4.20
18 ..	97,391	58.09	53 ..	91,314	25.32	88 ..	15,158	3.94
19 ..	97,335	57.12	54 ..	90,773	24.47	89 ..	12,427	3.70
20 ..	97,278	56.16	55 ..	90,191	23.63	90 ..	10,005	3.48
21 ..	97,220	55.19	56 ..	89,566	22.79	91 ..	7,905	3.27
22 ..	97,161	54.22	57 ..	88,895	21.96	92 ..	6,125	3.08
23 ..	97,101	53.26	58 ..	88,171	21.13	93 ..	4,650	2.91
24 ..	97,042	52.29	59 ..	87,388	20.32	94 ..	3,457	2.74
25 ..	96,984	51.32	60 ..	86,537	19.51	95 ..	2,515	2.59
26 ..	96,924	50.35	61 ..	85,608	18.72	96 ..	1,789	2.45
27 ..	96,861	49.38	62 ..	84,591	17.94	97 ..	1,243	2.32
28 ..	96,794	48.42	63 ..	83,479	17.17	98 ..	843	2.19
29 ..	96,723	47.45	64 ..	82,265	16.42	99 ..	557	2.08
30 ..	96,649	46.49	65 ..	80,944	15.68	100 ..	359	..
31 ..	96,570	45.53	66 ..	79,512	14.95	101 ..	225	..
32 ..	96,485	44.57	67 ..	77,962	14.24	102 ..	137	..
33 ..	96,392	43.61	68 ..	76,285	13.54	103 ..	81	..
34 ..	96,292	42.65	69 ..	74,470	12.86	104 ..	46	..

The tables are extracts from those produced by the Commonwealth Actuary, the source data being supplied by the Commonwealth Statistician and comprising: (i) the number of males and females living at each age last birthday, as shown by the 1961 Census; and (ii) the number of male and female deaths at each age (last birthday) in the years 1960, 1961 and 1962.

There are no life tables prepared on the basis of Tasmanian experience and in most legal and actuarial situations, it is normal to use the Australian Life Tables.

True Death Rates

The true death rate is the reciprocal of the complete expectation of life of a person at birth. In calculating e°_x where x is 0, the sum of the L_x values was taken as the total number of years lived by the original 100,000 over a period of a century or more. To arrive at the true death rate, the life-table can also be regarded as the experience of a single year so that the sum of the L_x values

no longer represents years lived but simply persons 'at risk' in association with 100,000 deaths. By way of illustration, in the male life table the sum of all survivors (L_x values) is 6,791,916 males associated with 100,000 deaths:

$$\text{True Death Rate} = \frac{100,000}{6,791,916} = 14.72 \text{ per } 1,000$$

The true death rate for a given period is unaffected by the particular age distribution of that period, and is determined solely by the mortality experience of the period as manifested in the rate of survival from each year of age to the next. The table below sets out complete expectation of life at birth and true death rates for the periods covered by Australian life tables:

Australia: Complete Expectation of Life at Birth and True Death Rates

Period	Complete Expectation of Life At Birth (Years)		True Death Rate (a)	
	Males	Females	Males	Females
1881-1890	47.20	50.84	21.19	19.67
1891-1900	51.06	54.76	19.58	18.26
1901-1910	55.20	58.84	18.12	17.00
1920-1922	59.15	63.31	16.91	15.80
1932-1934	63.48	67.14	15.75	14.89
1946-1948	66.07	70.63	15.14	14.16
1953-1955	67.14	72.75	14.89	13.75
1960-1962	67.92	74.18	14.72	13.48

(a) Number of deaths per 1,000 in stationary (or life-table) population.

While the complete expectation of life at birth has shown a marked increase in successive tables, the increase at other ages has not been so pronounced. The following table compares the complete expectation of life at selected ages for the period 1891-1900 with that for 1960-62:

Australia: Comparative Complete Expectation of Life

Age x	Expectation of Life (e^x) at each age according to experience of period			
	Male Lives		Female Lives	
	1891-1900	1960-62	1891-1900	1960-62
0	51.06	67.92	54.76	74.18
5	55.61	64.77	58.64	70.78
10	51.43	59.93	54.46	65.92
15	46.98	55.07	49.97	61.01
20	42.81	50.40	45.72	56.16
25	38.90	45.80	41.69	51.32
30	35.11	41.12	37.86	46.49
35	31.34	36.45	34.14	41.70
40	27.65	31.84	30.49	36.99
45	23.99	27.38	26.69	32.38
50	20.45	23.13	22.93	27.92
55	17.08	19.18	19.29	23.63
60	13.99	15.60	15.86	19.51
65	11.25	12.47	12.75	15.68
70	8.90	9.77	9.89	12.19
75	6.70	7.47	7.37	9.16
80	5.00	5.57	5.49	6.68

It will be noted that e°_x for age five years in the period 1891-1900 was actually higher than for age 0 years. This peculiarity was associated with the extremely high rate of infant mortality then prevailing.

Number of Life Table Survivors

The following table shows the number of survivors (i.e. l_x values) at various ages as presented in Australian Life Tables since 1901 i.e. for the periods 1901-1910, 1946-1948, 1953-1955 and 1960-1962.

Australia: Number of Survivors (l_x) at Selected Ages out of 100,000 Births

Age x	Period			
	1901-1910	1946-1948	1953-1955	1960-1962
MALES				
0	100,000	100,000	100,000	100,000
10	86,622	95,619	96,488	97,062
20	84,493	94,562	95,460	96,215
30	80,844	92,967	93,801	94,726
40	75,887	90,823	91,861	92,859
50	68,221	85,946	87,553	88,473
60	56,782	74,251	76,256	77,456
70	38,275	52,230	54,054	54,944
80	14,330	22,785	23,658	24,669
FEMALES				
0	100,000	100,000	100,000	100,000
10	88,395	96,549	97,228	97,664
20	86,459	95,953	96,774	97,278
30	82,909	94,740	96,055	96,649
40	78,001	92,758	94,715	95,481
50	71,945	89,011	91,573	92,713
60	63,247	81,257	84,665	86,537
70	46,793	65,398	69,613	72,505
80	21,356	35,401	39,633	43,453

The most significant feature is the increased number of survivors at age ten years and this can be related directly to the dramatic fall in infant mortality rates since the turn of the century. Attention is called also to the wide disparity between male and female survivors at ages 60, 70 and 80 years.

Chapter 6

PRIMARY INDUSTRY—RURAL

LAND TENURE AND SETTLEMENT

Introduction

The area of Tasmania is 16,885,000 acres, all of which had been proclaimed as Crown property when the first settlers arrived in 1803. In the period since their landing, 39.5 per cent of the State's total area has been alienated by grant or sale; the Crown still owns 59.0 per cent and the residual 1.5 per cent is in the process of alienation (i.e. being purchased from the Crown by instalment payments).

Historical

The first concern of the settlers on the Derwent and the Tamar in 1804 was the growing of grain, for which small holdings were adequate; thus by 1820, land obtained as grants from the Crown was confined to areas within easy reach of Hobart and Launceston and of the 16,885,000 acres of Crown land, less than 70,000 acres had been alienated.

In the 1820s, the successful export of wool to Britain created a demand for land in very much larger holdings and annual alienation of Crown land by free grant increased rapidly as shown in the following table:

Area of Land Alienated by Grants in Van Diemen's Land, 1820 to 1843
(⁰⁰⁰ Acres)

Year	Area Granted	Year	Area Granted	Year	Area Granted	Year	Area Granted
1820 ..	69	1826 ..	60	1832 ..	33	1838 ..	45
1821 ..		1827 ..	77	1833 ..	24	1839 ..	15
1822 ..	n.a.	1828 ..	165	1834 ..	9	1840 ..	10
1823 ..	434	1829 ..	208	1835 ..	9	1841 ..	7
1824 ..	43	1830 ..	108	1836 ..	8	1842 ..	..
1825 ..	(a)462	1831 ..	206	1837 ..	22	1843 ..	1

(a) Includes 350,000 acres granted to Van Diemen's Land Company.

From the previous table, it can be calculated that the alienation of Crown land by grant exceeded, in total, one million acres by 1825 and two million acres by 1843 (when this early system of free grants had virtually ceased). Apart from the 350,000 acres granted to the Van Diemen's Land Company in the north-west, the other alienated land included virtually the whole Midlands, the upper Derwent Valley and much of the east coast. At the same time—1843—less than 500,000 acres of Crown land had been sold, even though the price per acre ranged from \$0.50 to \$1.20.

A table in *Statistics of Van Diemen's Land* gives details of alienation in aggregate, and of leasing of Crown land at 1 January 1850 as follows:

Total Area Granted and Sold to Settlers 2,722,513 acres

Area of Land Held under Depasturing Licences .. 1,335,779 acres

The Crown land under licence provided \$33,428 by way of rental revenue to the Government in 1849. From this time, the process of alienation can be summarised as follows:

Land Alienation from 1860
(*000 Acres)

Year (a)	Land		Year (a)	Land	
	Aggregate Alienated	In Process of Alienation		Aggregate Alienated	In Process of Alienation
1860	3,069		1960	6,386	190
1880	4,233		1964	6,598	220
1900	4,835		1965	6,619	204
1910	4,932	1,104	1966	6,616	208
1920	5,242	964	1967	6,652	246
1930	5,721	542	1968	6,651	229
1940	5,912	423	1969	6,655	236
1950	6,143	365	1970	6,664	248

(a) At 31 December until 1948; at 30 June from 1950.

Sales of Crown Land

The sale of Crown land is currently carried out under the *Crown Lands Act 1935* as amended. Sales fall into two broad categories: (i) by selection; and (ii) by auction. In the case of selection, three classifications of rural land are established and purchase is made over a number of years by instalments, the term depending on the class of land. Land on which such instalments are being paid is defined as 'Crown land in process of alienation'. The following table shows details of recent sales:

Sales of Crown Land, 1969-70

Particulars	Number of Lots	Area	Value	
			Total	Average per Acre
		acres	\$	\$
Selections (Country Land) (a)—				
First-class	19	795	19,708	24.78
Second-class	66	11,225	136,049	12.12
Third-class .. ..	..	..	..	..
Sold by Auction (Country Land) ..	30	2,560	92,184	36.06
Total	115	14,580	247,941	17.01
Town and Suburban Lots	42	274	36,036	131.52
Grand Total	157	14,854	283,977	..

(a) Financial details refer to the contract price, the actual payment being made in instalments over a period of years.

The next table summarises sales of Crown land over a five-year period:

Sales of Crown Land: Summary

Year	Area of Land Sold (Acres)			Average Price per Acre (\$)	
	Country Lots	Town and Suburban Lots	Total	Country Lots	Town and Suburban Lots
1965-66	24,035	1,591	25,626	5.30	56.76
1966-67	46,633	128	46,761	13.20	390.63
1967-68	7,896	496	8,392	11.68	166.42
1968-69	15,794	118	15,912	16.36	1,033.84
1969-70	14,580	274	14,854	17.01	131.52

Present Use of Crown Lands

The total area of Tasmania is 16,885,000 acres, of which, at 30 June 1970, 39.5 per cent had been alienated; 1.5 per cent was in the process of alienation; the balance, 59.0 per cent, was Crown land, a proportion of which was under lease or licence for pastoral, agricultural and mining purposes. Crown land reserved for forestry purposes, including the State forests, accounted for 34.1 per cent of the State's area. ('Reservation' in the context of forestry does not imply land withheld from all types of use but simply land either used or to be used exclusively for forestry purposes.)

Alienation and Occupation of Crown Lands at 30 June (Acres)

Classification of Land	Area		
	1968	1969	1970
Alienated (Aggregate)	6,651,313	6,655,456	6,664,410
In Process of Alienation	228,878	236,451	247,576
Crown Lands—			
Leased or Licensed—			
Through Lands Department—			
Pastoral	708,426	661,542	661,227
Closer Settlement	15,747	8,093	8,013
Soldier Settlement	40,882	29,098	28,013
Short-term	1,128	512	512
Through Mines Department	59,600	66,245	53,500
Total	825,783	765,490	751,265
Forestry Reservations—			
State Forests	2,704,821	2,708,808	2,783,217
Other Land Reserved for Forestry Purposes (a)	1,832,119	2,814,393	2,974,476
Total	4,536,940	5,523,201	5,757,693
Other Crown Land	4,642,086	3,704,402	3,464,056
Area of State	16,885,000	16,885,000	16,885,000

(a) Includes estimated forested component of national parks and scenic reserves.

The previous table includes the item 'Forestry Reservations'. Cutting rights, either by exclusive forestry permit or by the award of pulpwood concessions, have been granted over almost 4.5 million acres of this area. A large proportion of the logs for sawmills, paper mills, etc. is obtained from these forestry reservations. Further details of Crown land reserved for forestry appear in the Forestry section of Chapter 7, 'Primary Industry—Non Rural'.

Although the possibility of rapidly alienating more Crown land for farming purposes on any large scale may seem remote, it should be noted that much of this land is nevertheless of importance to the State economy, specifically for forestry and tourism. Crown land reserved for forestry use occupies approximately 34.1 per cent of the area of the State while reservations classed as National Parks and Scenic Reserves account for 6.1 per cent. Details of the latter type of reservation appear in the next section.

National Parks and Scenic Reserves

The National Parks and Wildlife Service (which in 1971 took over the functions of the Animals and Birds Protection Board and the Scenery Preservation Board) is responsible for the administration of the State's National Parks and Scenic Reserves which occupy a part of the residual Crown land. Details of National Parks are as follows:

National Parks at 30 June 1971

Name	Locality	Area (Acres)
Cradle Mountain-Lake St Clair	Central Highlands	338,950
South-West (incl. Lake Pedder)	South-West	473,411
Mt Field	Derwent Valley	40,058
Ben Lomond	North-East	39,615
Frenchmans Cap	West Coast	25,240
Hartz Mountains	South	21,300
Mt Barrow	North	1,134
Freycinet Peninsula	East Coast	18,643
Rocky Cape	North-West	4,000

The area under reservation as National Parks is 962,352 acres and as Scenic Reserves, a further 63,643 acres; in total, 1,025,995 acres. The following list gives details of the various types of reserve, together with location and area (expressed to the whole number below where fractions of an acre are recorded):

Scenic Reserves at 30 June 1971

Type of Reserve and Name	Locality	Area (Acres)
Coastal Reserves—		
Stewarts Bay	Tasman Peninsula	7
Stewarts Bay, Esplanade, Pt Puer	Tasman Peninsula	58
Pt Puer-Crescent Bay	Tasman Peninsula	92
Brown Mt-Remarkable Cave	Tasman Peninsula	150
Eaglehawk Neck and Foreshore	Tasman Peninsula	90
Eaglehawk Neck-Taranna	Tasman Peninsula	61
Tasman Arch-Blowhole	Tasman Peninsula	140
Waterfall Bay	Tasman Peninsula	30
Fossil Island	Tasman Peninsula	3
Tessellated Pavement	Forestier Peninsula	9
Lookout Rock	Bicheno	5
Cookville-Penguin Island	Bruny Island	3
Fluted Cape-Cloudy Bay	Bruny Island	600
Port Davey Foreshore	South-West	1,350
Port Davey Islands	South-West	202
Schouten Island	East Coast	8,500

Scenic Reserves at 30 June 1971—continued

Type of Reserve and Name	Locality	Area (Acres)
Waterfalls—		
St Columba	Pyengana	775
Forth	Sheffield	135
Marriott	National Park	300
Lifey	Western Tiers	250
Mt Barrow	North	200
River Reserves—		
River Pieman	West Coast	8,215
River Gordon	West Coast	6,200
Roger River Pass	North-West	430
Derwent Cliffs	New Norfolk	11
Cave and Geological Reserves—		
Hastings	South	131
Marakooa	Mole Creek	146
King Solomon	Mole Creek	500
Baldock (3 areas)	Mole Creek	37
		63
		5
Gunns Plains	Ulverstone	24
Henty Glacial Moraine	West Coast	2
Scenic Roads—		
Lyell Highway	Western Highlands	18,000
Zeehan-Renison Bell	West Coast	272
St Marys Pass	St Marys	674
Murchison Highway	West Coast	1,516
Fern Gullies, Forests, etc.—		
Thermal Springs	Kimberley	1
Thermal Springs	Hastings	18
Chalet	Hastings	1
Waterfall Creek	Bruny Island	60
Ferndene Gorge	Penguin	6
Notley Gorge	West Tamar	28
Hellyer Gorge	Waratah area	1,406
Corra Linn	Launceston	1
Corinna	West Coast	8
Bird Sanctuary	Steppes	16
Fairy Glade	Western Tiers	97
Bradys Lookout	Rosevears	2
Parramores Lookout	Port Arthur	1
Mt Strzelecki	Flinders Island	9,750
St Patricks Head	St Marys	370
Denison River	Hamilton Range	1,000
Mt Montgomery	North-West	740
Historic Sites, Buildings and Monuments—		
Town of Port Arthur	Tasman Peninsula	217
Mt Arthur	Tasman Peninsula	10
Convict Coal Mines	Saltwater River	528
Bowen's Monument	Risdon	..
Bowen Park	Risdon	6
George III Monument	Southport	25
Tasman Monument	Dunalley	..
D'Entrecasteaux Monument	Gordon	1
York Town	West Tamar	4
D'Entrecasteaux' Watering Place	Recherche Bay	3
Settlement Island	Macquarie Harbour	15
Isle of Condemned	Macquarie Harbour	..
Old Gaol and Paddock	Richmond	1
Entally House	Hadspen	85
Steppes Homestead	Steppes	25
Shot Tower	Taroona	8
Waubadebar's Grave	Bicheno	..
Toll House	New Norfolk	..
Bluff Battery	Bellerive	4
Oatlands Mill	Oatlands	..
161 Davey Street	Hobart	..
Batchelor's Grave	Taroona	..

War Service Land Settlement

After both World Wars, Government schemes were operated to assist ex-servicemen to settle on the land. The following section deals only with the scheme initiated to settle on the land eligible ex-servicemen from the 1939-45 War and the Korean and Malayan operations.

The Commonwealth has provided finance but the administration has been undertaken by the War Service Land Settlement Division of the Agricultural Bank, a State development authority. Work has been completed and all holdings have been made over to settlers.

The following table summarises progress in physical terms (farms allotted, etc.) and in financial terms (loans to settlers, payments for acquisition, etc.):

**War Service Land Settlement,
1939-1945 War and Korea-Malaya Operations
Summary to 30 June 1970**

Operations		Commonwealth Expenditure (Aggregate)	
Particulars	Total to 30 June 1970	Advances in Respect of Tasmania	Total to 30 June 1970 (\$'000)
Land Acquired (Acres) ..	495,106	For Acquisition of Land	5,068
Farms Allotted—		For Development and Improvement of	
Number	495	Land	35,744
Area (Acres)	452,742	Contribution to Excess Cost over Val-	
Farms Being Developed—		uation	31,768
Number .. ..	..	Settlers' Credit Facilities	15,051
Area (Acres) .. ..	..	Concessions, Remissions, Moneys	
		Written Off—Interest	764
		Principal	464
		Living Allowances for Settlers	474
		Irrigation Projects	6
		Cost of Administration of Credit	
		Facilities	887
		Total	90,226

Of the farms allotted to 30 June 1970, the largest concentrations were at King Island, Flinders Island, the Lawrenny Estate and the Montagu project.

Of the 495 farms both allotted and occupied at 30 June 1970, the most popular types were: dairy farms, 194; fat lamb farms, 172; fat lamb and beef farms, 72; wool sheep farms, 20.

Advances to Primary Producers

Although the principal efforts in land settlement since World War II have been made under the War Service Land Settlement Scheme, the State Government has also operated its own loans schemes to assist primary producers. The following table shows particulars of advances under various Acts:

Advances to Primary Producers by Agricultural Bank

Act	Total Advances Made During 1969-70	Total Advances to 30 June 1970	Balances Outstanding at 30 June 1970	
			Number	Amount
	\$'000	\$'000		\$'000
State Advances Act (including Rural Credits) 1935	1,329	15,519	1,521	5,490
Commonwealth Re-establishment and Employment Act 1945 ..	..	834	55	37
Primary Producers' Relief Act—				
1947 .. .. .	..	595	6	3
1962 .. .. .	..	19	3	3
1968	427	587	109	546
Closer Settlement (Soldiers) Act ..	..	2,184	84	82
Closer Settlement Act	22	612	92	562
Fire Damage Relief Act 1967 ..	135	2,599	766	2,361
Total	1,913	22,949	2,636	9,084

The main forms of assistance now available are: (i) Under Part III of the *State Advances Act* 1935, loans may be made to persons in rural industries for the purchase of farm properties, discharge of mortgage or for making improvements. Loans may be made for periods up to 30 years at an interest rate determined by the Treasurer. In July 1970, the rate was increased from 6.0 per cent to 7.0 per cent. The present limit on any single advance is \$20,000; and (ii) under Part IV of the Act (Short Term Rural Credits), loans may be made to persons engaged in prescribed rural industries for the purchase of stock, plant, seeds and manures and for other purposes considered necessary for carrying on their industry. There is no statutory limit to the amount which may be advanced to each applicant. Usual period of loans are: plant, ten years; stock, five years; land development, ten to fifteen years; structural improvements, 20 years; working expenses, one to three years.

The *Fire Damage Relief Act* 1967 was part of the State Government reaction to the disastrous bushfires of February 1967 when 650,000 acres of farm land, bush and forest were devastated in fourteen southern municipalities; the fire caused severe stock and fodder losses and destroyed farm homes, barns, fences, etc. Assistance for the rebuilding of farmers' homes was provided under the general scheme applicable to all citizens but other types of farm rehabilitation were provided for in a loan scheme administered by the Agricultural Bank.

RURAL RECONSTRUCTION

Introduction

For more than a century, governments in the Australian States were concerned with the promotion of closer settlement, i.e. the fostering of schemes to sub-divide large properties and encourage the proliferation of small farms. Recent economic trends have caused this policy to be reversed and the pendulum has swung the other way.

On 4 June 1971 an agreement was signed between the Commonwealth of Australia and the State of Tasmania, the object being the implementation of a national scheme of rural reconstruction; in essence, the Commonwealth will provide the financial assistance but the detailed administration is vested in the State. Similar Commonwealth-State agreements were entered into by the other Australian States on the same date.

The sum available for national application is \$100m of which Tasmania's share is \$3.3m, and the period covered is 1971-1975. In October, the Tasmanian Parliament passed the *Rural Reconstruction Act 1971* to set up the State mechanism for the implementation of this national scheme.

The concepts underlying the scheme were originally framed with the particular circumstances of the Australian sheep and wheat industries in mind. Over recent years, these industries have been affected by drought, falling prices, quotas and rising costs; in short, producers faced falling net incomes and a drop in the value of properties with the result that many were unable to service existing commitments. However, the operation of the scheme now provides for the inclusion of all types of agricultural industry except for 'farm build-up' cases covered under the *Marginal Dairy Farms Reconstruction Act 1971*.

Basic Aims

The following shows the heads under which reconstruction will be attempted:

(i) *Debt Reconstruction*

This is to apply to the farmer who has sound prospects of successful operation but who has used all his cash resources and cannot meet his financial commitments.

The assistance can encompass a re-arrangement and/or a composition of debts, the negotiation of a concessional rate of interest in substitution for existing rates, and advances of additional funds for carry-on expenses, the purchase of livestock and further property development. The re-arrangement and/or composition of debts may be accomplished by the Reconstruction Authority advancing money to pay existing creditors in whole or in part; or making arrangements with creditors to refrain from taking action against a debtor for a specified time; and in some cases asking creditors to defer or write-off part of their debts.

Advances made under the scheme may be for a maximum term of 20 years and there is provision for an initial period where no principal repayment may be required; interest will be at an average of four per cent.

(ii) *Farm Build-Up*

The basic intention is to assist in the build-up of properties to a size commensurate with economic operation; the concern is with the amalgamation of adjoining holdings.

When an adjoining property is sold to a farmer, the Reconstruction Authority may make a grant to cover the value of acquired assets which are not useful to the enlarged property (e.g. the farm dwelling). Advances may also be made by the Authority for carry-on expenses, plant, livestock and property development if these demands are associated with the additional land. Advances will be restricted to a maximum term of 20 years and interest to a minimum of 6.25 per cent.

If a farmer participates in the debt reconstruction scheme, he is not thereby disqualified from the farm build-up scheme if circumstances warrant his inclusion.

(iii) *Rehabilitation*

Loans of up to \$1,000 may be made to those obliged to leave a rural industry. Those eligible comprise: (i) those selling a property to an adjoining owner who has been assisted under the farm build-up scheme; or (ii) those unable to secure assistance under the debt reconstruction scheme because of poor long-term prospect of success.

Retraining: Certain farmers, family members and farm employees leaving the land will be eligible for retraining, under a scheme to be administered by the Department of Labour and National Service.

Tasmanian Authority

In Tasmania, the administering authority is the Rural Reconstruction Board, composed as follows: a chairman, the manager of the Agricultural Bank; one representative each from the Agricultural Department and the State Treasury; (iv) an appointee public accountant with farmers as clients; and (v) two practical farmers. The machinery of the Agricultural Bank is available to help in the administration of the scheme.

RURAL INDUSTRY**General**

The Tasmanian rural economy is marked by great diversity and even allowing for the special regional adaptations made necessary by soil, climate, terrain and altitude, there are many rural holdings which individually exhibit an extremely varied range of activities.

The present pattern of farming puts great emphasis on the rearing of livestock and on the increased production of wool, meat and dairy products; field crops now include vegetables for canning and freezing but the relatively large areas devoted to oats, green feed and other stock feed are indicative of an orientation towards livestock raising. The traditional 'specialities', orchards and hop growing, are still important in the total picture but the major development in the years since World War II has been the rapid creation of large areas of sown and semi-improved pasture.

The next section deals with the early history of Tasmanian farming and emphasises the importance of wheat growing in the early colonial era.

Historical

The pattern of early agricultural development can be inferred from the following summary of official farm statistics:

Area Under Crops: Van Diemen's Land, 1818-1841
(Acres)

Year	Wheat	Barley	Oats	Peas	Beans	Pota- toes	Turnips	English Grasses	Tares	Total Crops
1818 ..	5,049	214	<i>n.a.</i>	149		268	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	(a)
1828 ..	20,357	3,864	1,573	646	35	1,292	1,296	4,970	..	34,033
1838 ..	41,760	13,495	21,576	868	128	3,532	9,054	17,150	437	108,000
1841 ..	63,734	9,010	16,471	738	102	4,185	15,943	22,082	349	132,614

(a) Not available on a comparable basis.

Livestock statistics for the same period are summarised as follows:

Livestock: Van Diemen's Land, 1818-1841

Year	Horses	Horned Cattle	Sheep	Goats
1818	267	12,356	127,883	..
1828	2,034	84,476	553,698	708
1838	9,656	75,087	1,214,485	2,400
1841	12,000	90,498	1,167,737	2,630

As suggested by the previous table of areas the principal crop was wheat. In 1842, the island colony was Australia's principal wheatgrower and, with nearly 80,000 acres sown to this crop, contained nearly half the Australian wheat acreage. Throughout the 19th century wheat was a principal cash crop but eventually competition from the other States (both in type and price) caused a decline, as shown in the following table:

Wheat for Grain: Area and Total Production, Selected Years

Year	Area	Production	Year	Area	Production
	acres	'000 bushels		acres	'000 bushels
1860-61 ..	66,450	1,416	1930-31 ..	19,107	391
1870-71 ..	57,382	897	1940-41 ..	8,038	140
1880-81 ..	50,022	750	1945-46 (b) ..	4,982	67
1890-91 ..	32,452	643	1950-51 ..	5,318	95
1898-99 (a) ..	85,287	2,304	1960-61 ..	6,912	148
1900-01 ..	51,825	1,110	1967-68 ..	12,018	316
1910-11 ..	52,242	1,121	1968-69 ..	17,394	410
1920-21 ..	28,284	566	1969-70 ..	14,732	353

(a) Peak production year.

(b) Record low production year.

The home-grown product is now used to make high quality biscuit flours (for which it is well suited) and for stock feed.

Before the 1850s, most farm land had been confined to the eastern half of the State where open plains and open forest country encouraged penetration. Further development required the clearing of more thickly timbered land, the principal attraction being the fertile chocolate-coloured volcanic soils of the North-West Coast; at the same time, the discovery of the basalt lands in the Scottsdale-Ringarooma area was followed by settlement in the north-east. Late in the 19th century, pioneers began to develop orchards, mainly for apples, in the thickly-timbered country of the Huon, Tamar and lower Mersey Valleys. In the decade after Federation, annual apple production first exceeded one million bushels (as compared with the 1963-64 record crop of 8½ million bushels).

In the 20th century, the State and Commonwealth governments played major parts in encouraging rural development and settlement, comprehensive soldier settlement schemes being introduced after both World Wars. In the last decade, major private schemes have concentrated on pastoral development in the far north-east.

Rural Industry Statistics

Sources of Information

The statistics are, in the main, compiled from census returns of agricultural, pastoral and dairying production collected from rural holdings in Tasmania at 31 March each year. In conjunction with the general census, supplementary collections from farms are conducted where the harvesting of certain crops has not been completed by 31 March (e.g. apples, potatoes).

Additional information is also obtained from various marketing and other authorities and from a number of entirely separate collections covering such data as slaughtering and meat and dairy production.

Period Covered

Data relating to area sown, production and number of holdings growing crops are, in general, for the season ended 31 March. In cases where harvesting has not been completed by 31 March (e.g. potatoes), total production is nevertheless collected and included in published figures. Livestock numbers also are reported as at 31 March.

Rural Holdings

A 'rural holding' is defined as a piece of land of one acre or more in extent used for the production of agricultural products or for the raising of livestock and the production of livestock products. Care should be exercised in drawing conclusions from changes in the number of rural holdings over a series of years. There are many small sub-commercial holdings, a proportion being no more than large residential blocks with perhaps a small plot of potatoes or other crops, or carrying a house-cow or poultry. It is very difficult, in some cases, to determine whether or not they should be regarded as rural holdings within the definition and over a period of time some variation in treatment has occurred.

Area of Crops

Total area of land sown or planted to crops is shown irrespective of whether the whole area was subsequently harvested or whether a portion or the whole of the crops failed and was not harvested. Where two successive crops are grown on the same land during the one season the land is included twice in the area of crops.

Value of Production

The statistics in the following sections refer mainly to areas sown to crops and quantities produced. The value of the various crops is shown under 'Value of Production' in Chapter 7.

Classification of Rural Holdings By Type of Activity

Because many Tasmanian holdings are devoted to more than one specific type of farming activity it is difficult to present, in summary form, the essential characteristics or structure of rural industry in the State today. Before considering in detail crop areas, production statistics and livestock numbers, it is logical to examine the main 'line' of each farm and to determine the principal activities; from this study can be evolved a classification of holdings by type of activity. In 1959-60, the first attempt was made at classifying rural holdings in all States on a uniform basis. Similar classifications were produced for 1965-66 and 1968-69 and an annual series will now be produced. The following section describes the 1968-69 classification.

The next table is a summary of the main farm types for the years 1959-60, 1965-66 and 1968-69, while the following section describes the 1968-69 classification in detail.

Holdings (a) Classified According to Type of Activity, Selected Years

Year	Type of Holding						
	Sheep	Cattle		Fruit	Multi-Purpose	Other	Total Classified
		Meat	Milk				
1959-60	1,984	153	3,038	1,527	743	684	8,129
1965-66	1,547	276	3,026	1,234	924	857	7,864
1968-69	1,423	468	2,678	906	652	820	6,947

(a) Excluding 'sub-commercial' and unused holdings.

Classification of Rural Holdings, 1968-69

Because of the large number of holdings on which more than one type of activity occurs, it was necessary to determine the principal activity before such holdings could be classified to particular types. Since it was desirable to exclude from the principal classification small sub-commercial holdings (generally operated only on a part-time basis), it was also necessary to have some means of determining at what scale of operations holdings engaged in various activities could be considered as commercial propositions. The measuring of the importance of each type of activity was based on *gross receipts at the farm* (estimated from quantity details shown on the annual statistical returns together with price data from independent sources).

Holdings for which estimated farm gross receipts were less than \$2,000 in the 1968-69 classification were treated as 'sub-commercial' and these, together with unused holdings, holdings used for intermittent grazing, and holdings attached to prisons, hospitals, etc. were not classified by type of farming activity. When these holdings had been eliminated farms were classified according to the following formula:

If a single activity accounted for 50 per cent or more of the total gross receipts, that activity determined the holding type. Where no single activity accounted for 50 per cent of the total gross receipts, the holdings were classified as 'multi-purpose'. Principal exceptions to this general rule were holdings reporting: (i) sheep and cereal grains; and (ii) cattle (milk production) and pigs. In the former case, the holding was treated as a composite sheep-cereal grain type if the combined receipts obtained from the two activities added to 75 per cent or more of total gross receipts, so long as gross receipts from sheep were no more than four times and not less than one quarter of the gross receipts obtained from cereal grains. In the latter case, if the combined receipts obtained from cattle (milk production) and pigs represented 50 per cent or more of total gross receipts, the holding was classified as dairying.

The next table provides details of the number of holdings classified to each type of activity in each statistical division.

A number of interesting conclusions emerge from a consideration of 'classified holdings' in the following table: (i) the main activity of 66 per cent of classified holdings is concerned with either cattle or sheep; (ii) cereal grain growing barely exists as a main activity and is principally carried out in conjunction with the grazing of sheep or cattle; (iii) three main types of holding, namely dairying, sheep and fruitgrowing in that order, account for over 72 per cent of classified holdings; (iv) over nine per cent of classified holdings must carry on at least three distinct activities, otherwise they could not be classified as 'multi-purpose' in accordance with the 50 per cent formula prefacing the table; and (v) dairying is clearly the major activity of the North Western Statistical Division and fruitgrowing of the Southern Statistical Division.

Holdings Classified According to Type of Activity, 1968-69

Type of Holding	Statistical Division								Total
	Hobart	South East-ern	South-ern	North West-ern	North East-ern	North Mid-land	Mid-land	Balance (a)	
Sheep-Cereal									
Grain ..	19	58	5	10	5	38	16	..	151
Sheep ..	45	253	61	172	264	300	328	..	1,423
Cereal Grain ..	..	2	..	1	..	1	2	..	6
Cattle—Meat ..	7	6	47	246	121	28	7	6	468
Milk ..	40	32	89	1,841	479	169	27	1	2,678
Fruitgrowing..	92	7	646	38	113	..	10	..	906
Vegetables—									
Potatoes ..	2	5	1	174	11	2	37	..	232
Other & Mixed	31	10	4	112	26	9	3	1	196
Poultry ..	18	6	14	10	16	6	3	..	73
Pigs ..	8	7	3	13	3	2	2	1	39
Other (One Main Purpose)	25	..	43	9	8	1	33	4	123
Multi-Purpose	30	40	37	357	64	94	29	1	652
Total 'Class-ified' ..	317	426	950	2,983	1,110	650	497	14	6,947
Sub-Commercial	377	280	542	946	592	294	189	15	3,235
Unused ..	21	18	28	83	37	10	5	..	202
Total All Holdings..	715	724	1,520	4,012	1,739	954	691	29	10,384

(a) The City of Launceston plus the Western Division mining municipalities.

Size of Rural Holdings

A classification of rural holdings by size is carried out at irregular intervals; the following table compares the size of holdings in selected years:

Classification of Rural Holdings by Size

Size of Holdings (Acres)	Number of Holdings			Area of Holdings ('000 Acres)		
	1928	1966	1969	1928	1966	1969
1 and Under 50	3,164	2,365	2,241	58	50	47
50 and Under 100	2,108	1,625	1,457	147	117	105
100 and Under 500	4,779	4,770	4,624	1,095	1,069	1,054
500 and Under 1,000	726	946	950	594	654	659
1,000 and Under 5,000	775	845	888	1,600	1,771	1,862
5,000 and Under 10,000	146	130	124	1,018	892	838
10,000 and Under 20,000	67	67	68	925	910	918
20,000 and Under 50,000	29	24	27	812	711	742
50,000 and Over	5	5	5	384	323	362
Total	11,799	10,777	10,384	6,633	6,496	6,591

Types of Farming Activity, 1969-70

At 31 March 1970, there were 10,159 rural holdings (compared with 11,202 in 1960). The following table shows the number of holdings growing selected principal crops or carrying livestock; this gives some indication of farming activities but on a cruder basis than the earlier table since the same holding may be included more than once in the figures (in an extreme case, the one holding could be included eleven times):

Number of Holdings Growing Principal Crops or Carrying Livestock

Particulars	1959-60	1966-67	1967-68	1968-69	1969-70
Number of Rural Holdings ..	11,202	10,641	10,631	10,384	10,159
Holdings—					
Growing—					
Grain (a)—					
Barley	209	383	403	450	475
Oats	321	465	463	421	307
Wheat	141	194	159	239	203
Hops	99	106	111	108	102
Vegetables (b)—					
Potatoes	2,425	1,582	1,543	1,410	1,174
Onions	14	22	24	26	34
Fruit (b)—					
Orchard	1,520	1,260	1,184	1,108	920
Small Fruit	610	393	344	348	353
Carrying—					
Cattle	9,031	8,598	8,631	8,545	8,405
Sheep	5,945	5,224	5,294	5,098	4,815
Pigs	3,681	2,749	2,545	2,400	2,302

(a) Twenty acres and over.

(b) One acre and over.

It should be noted that a fall in the number of holdings engaged in a particular activity does not necessarily involve decreased total activity. Holdings carrying cattle have decreased over the last ten years while cattle numbers have shown a 72 per cent increase in the same period. The decline in holdings growing potatoes and small fruit has been matched by an actual fall in crop acreage and in total production.

Land Utilisation on Rural Holdings

Rural holdings at present occupy 39.0 per cent of Tasmania's total area; details of land utilisation follow:

Land Utilisation on Rural Holdings
(Acres)

Particulars	1959-60	1967-68	1968-69	1969-70
Area Used for Crops (a)	332,364	419,708	476,368	417,566
Land Laying Fallow (b)	72,802	76,711	61,170	63,857
Sown Pasture Grazed (c)	1,214,424	1,679,395	1,725,275	1,820,085
Other Land Used for Grazing ..	3,223,253	3,058,074	2,951,773	2,964,617
Balance of Holdings	1,668,639	1,345,329	1,376,815	1,250,410
Total Area of All Holdings ..	6,511,482	6,579,221	6,591,402	6,516,537

(a) Includes area of sown pasture *cut* for hay, seed, silage or green feed; includes also orchards and small fruits.

(b) Excludes short period or summer fallow.

(c) Excludes area *cut* for hay, seed, silage or green feed.

Definition of 'Crops'

As defined in the previous table, crops are produced not only from cultivated fields and orcharding land but also from sown pasture if its growth is *cut* for hay, seed, silage or green feed. The following table shows the total area of crops on this basis with double-cropping also being taken into account:

**Total Area of Crops
(Acres)**

Area	1959-60	1967-68	1968-69	1969-70
Used for Crops	332,364	419,708	476,368	417,566
Double-Cropped	1,760	10,822	12,701	9,791
Total Area of Crops	334,124	430,530	489,069	427,357

Definition of 'Sown Pasture'

Sown pasture is defined in these statistics as 'clovers and grasses (other than native)'. The next table shows the total area of sown pasture and distinguishes between areas *cut* for various purposes and areas simply grazed:

**Sown Pasture: Classification of Total Area
(Acres)**

Particulars	1959-60	1967-68	1968-69	1969-70
Clover for Seed	1,005	203	436	1,320
Grass for Seed	1,429	2,182	4,060	3,162
Clover and Grasses Cut For—				
Hay	106,528	152,481	191,439	157,048
Silage and Green Feed	12,454	7,920	12,733	14,180
Total 'Under Crop'	121,416	162,786	208,668	175,710
Clover and Grasses Grazed (Not Cut)	1,214,424	1,679,395	1,725,275	1,820,085
Total Sown Pasture	1,335,840	1,842,181	1,933,943	1,995,793

Trend in Land Utilisation

The total area of rural holdings is still approximately the same as it was at the end of World War I. The most striking change is the rapid development of sown pasture, the previous table showing a 49 per cent increase in the decade ending 1969-70. Twenty-seven years ago (1944-45), the area of sown pasture was under 500,000 acres; it passed 1,000,000 acres in 1955-56 and reached 1,996,000 acres in 1969-70. A substantial increase has also occurred in the area of sown pasture *cut* for hay, seed, silage or green feed and since this is, for the purpose of these statistics, a component of the area used for crops, corresponding variations in total crop areas are due to this factor.

Grain crops are no longer the dominant item and many primary producers, through their development of sown pasture, have become grassland farmers with the mower and pick-up baler as their main 'harvesting' machines (as opposed to the reaper and binder on ploughed fields). The trend to grassland farming has meant greatly increased capacity to carry stock, the numbers of both sheep and cattle having more than doubled since World War I. (In the decade ending 1969-70, sheep increased by 29 per cent from 3.5 million to 4.5 million, cattle by 72 per cent from 375,000 to 646,000.)

Temporary and Permanent Pasture

It should be noted that some of the areas included as sown pasture are 'temporary' in the sense that they may be put under crop after some years of use for grazing. In the same sense, specific areas used for crops in any year are also 'temporary' since they may later be converted to sown pasture. This

rotational pattern, characteristic of much of Tasmania's mixed farming, obviously is designed to maintain soil fertility at a high level and to guard against the soil exhaustion associated with the earlier era of intense cultivation of cash crops. 'Ley' farming is the technical term for this rotational method.

Farm statistics for 1969-70 show the area of sown pasture as 1,995,793 acres and indicate that the trend of the previous decade is being maintained.

The Tasmanian Department of Agriculture in 1970 released a new perennial rye-grass (Tasdale) superior to the widely-sown New Zealand perennial rye-grass. The main seed varieties produced on Tasmanian farms during the past five years are listed in the following table:

Grass Seed Production (a)
(Cwt)

Type of Grass	1965-66	1966-67	1967-68	1968-69	1969-70
Clover—White	381	382	394	214	512
Red	44	237	5	11	352
Subterranean .. ..	..	2	4	237	2
Other	29	10	..	13	19
Ryegrass—Perennial	3,389	8,324	3,971	9,227	6,296
H.I.	1,056	1,590	298	2,918	899
Italian	340	1,068	457	902	439
Cocksfoot	56	49	29	40	54
Other	21	41	215	1,042	307
Total	5,316	11,702	5,373	14,604	8,880

(a) Includes all pasture seed harvested, whether as a separate crop or from an area sown to grain crops.

Agriculture

Sufficient has been said on land utilisation to emphasise the trend to grass-land farming. In the summary table below showing the area devoted to the principal crop types, the area of sown pasture *cut* for hay, seed, silage or green feed is attributed to the appropriate crop, e.g. as a component of hay and green feed areas.

Area of Principal Crops: Summary
(Acres)

Crop	1959-60	1967-68	1968-69	1969-70
Cereals for Grain	43,168	71,532	75,074	66,676
Hay	126,544	178,838	210,563	171,802
Green Feed	74,683	83,003	111,555	103,181
Field Peas (Blue, Grey and Other)	10,878	5,562	5,606	5,706
Other Stock Feed Crops	24,736	35,053	26,732	20,991
Grass Seed	2,446	2,385	4,496	4,530
Industrial Crops (Hops & Mustard)	1,779	1,907	1,913	1,675
Vegetables for Human Consumption	26,190	29,157	29,781	28,298
Orchard Fruit	20,243	20,340	19,989	19,678
Small Fruit	2,470	1,422	1,442	1,466
All Other Crops	987	1,331	1,921	3,355
Total Area of Crops	334,124	430,530	489,069	427,357

Details of individual crops, their area, production and yield per acre, are shown in the next table:

Crops: Area, Production and Yield Per Acre

Crop and Unit of Quantity	Average, Ten Years Ended 1968-69			Year 1969-70		
	Area (Acres)	Production		Area (Acres)	Production	
		Total	Yield Per Acre		Total	Yield Per Acre
CEREALS FOR GRAIN (BUSHELS)						
Barley	18,670	616,801	33.04	29,692	1,095,427	36.89
Oats	29,286	690,316	23.57	22,167	454,937	20.52
Rye	278	4,005	14.41	85	666	7.84
Wheat	13,672	342,095	25.02	14,732	352,651	23.94
HAY (TONS)						
Grass and Clover ..	150,445	290,494	1.93	157,048	330,991	2.11
Oaten	15,722	29,616	1.88	9,425	18,880	2.00
Other	2,887	5,550	1.92	5,330	11,666	2.19
GRASS SEED (CWT)						
Clover	978	672	0.69	1,320	885	0.67
Other (a)	3,480	8,401	2.07	3,162	7,995	2.53
FIELD PEAS (BUSHELS)						
Blue	4,262	93,808	22.01	3,898	118,477	30.39
Grey and Other.. ..	3,741	67,736	18.11	1,808	56,510	31.26
OTHER STOCK FEED CROPS						
Horse Beans .. bushels	435	9,244	21.25	242	3,470	1,434
Turnips, Swede and White tons	26,867	n.a.	n.a.	20,703	n.a.	n.a.
Other	217	n.a.	n.a.	47	..	..
INDUSTRIAL CROPS (LB)						
Hops (b)	1,462	2,664,000	1,822	1,395	2,796,000	2,004
Mustard	324	136,000	420	193	80,560	417
VEGETABLES FOR HUMAN CONSUMPTION						
Beans, French and Runner .. '000 lb	665	5,348	8.02	1,577	11,232	7.12
Peas, Green (c)— For Processing '000 lb	13,028	40,561	3.09	14,590	66,042	4.50
Sold in Pod .. '000 lb	147	169		117	213	
Potatoes tons	11,626	71,552	6.15	9,367	67,850	7.24
Turnips, Swede and White tons	723	4,784	6.62	499	3,427	6.87
Other	1,433	..	..	2,149	..	..

Crops: Area, Production and Yield Per Acre—continued

Crop and Unit of Quantity	Average, Ten Years Ended 1968-69			Year 1969-70		
	Area (Acres)	Production		Area (Acres)	Production	
		Total	Yield Per Acre		Total	Yield Per Acre
ORCHARD FRUIT (BUSHELS)						
Bearing—						
Apples	15,401	6,967,000	452	14,343	7,400,000	516
Apricots	437	36,569	84	275	28,000	102
Pears	1,399	503,600	360	1,219	496,000	407
Plums and Prunes ..	68	14,112	208	34	6,000	176
Other	84	..	..	71	..	..
Non-bearing	2,788	..	..	3,746	..	..
SMALL FRUIT (LB)						
Bearing—						
Currants (Black and Red)	806	2,705,000	3,356	577	2,063,000	3,575
Gooseberries	32	261,000	8,156	24	142,000	5,917
Loganberries	152	944,000	6,211	102	446,000	4,373
Raspberries	706	3,592,000	5,088	517	2,812,000	5,439
Strawberries	73	260,000	3,562	65	226,000	3,477
Non-bearing	172	..	..	183	..	..

(a) Production includes seed harvested from areas sown to grain crops; this seed is excluded from the average yield figures.

(b) Non-bearing area excluded; production expressed in dry weight.

(c) Ex-shell weight.

Summary of Principal Crops

The following tables, which summarise the area of selected principal crops and give details of production for recent years, illustrate: (i) the increasing importance of barley for grain, and of green peas and french and runner beans for processing; and (ii) the declining importance of potatoes, small fruit and hops.

Selected Principal Crops: Area and Production

Crop and Unit of Quantity	1959-60	1965-66	1966-67	1967-68	1968-69	1969-70
AREA (ACRES)						
Barley for Grain	12,396	19,907	21,057	24,051	26,214	29,692
Oats for Grain	22,017	28,290	35,909	35,371	31,434	22,167
Wheat for Grain	8,264	14,107	12,747	12,018	17,394	14,732
Hay	126,544	147,828	203,181	178,838	210,563	171,802
Field Peas	10,878	7,866	5,982	5,562	5,606	5,706
Grass Seed	2,446	3,110	5,136	2,385	4,496	4,530
Hops, Bearing	1,436	1,491	1,468	1,502	1,521	1,395
Beans, French and Runner	246	606	970	1,041	1,666	1,577
Peas, Green—						
For Processing	7,872	15,907	15,221	14,877	14,014	14,590
Sold in Pod	247	133	83	67	96	117
Potatoes	15,525	11,993	10,278	10,960	11,461	9,367
Orchards, Bearing—						
Apples	16,083	15,454	15,235	14,945	14,487	14,343
Pears	1,460	1,435	1,398	1,220	1,175	1,219
Currants (Black & Red)	844	765	695	548	590	577
Loganberries	222	108	139	94	125	102
Raspberries	992	651	577	452	484	517
Strawberries	86	74	67	66	67	65

Selected Principal Crops: Area and Production—*continued*

Crop and Unit of Quantity	1959-60	1965-66	1966-67	1967-68	1968-69	1969-70
PRODUCTION						
Barley for Grain .. bushels	418,502	683,827	771,750	884,222	884,067	1,095,427
Oats for Grain .. bushels	511,796	676,739	947,960	1,013,665	582,910	454,937
Wheat for Grain .. bushels	181,728	368,351	385,243	316,288	410,263	352,651
Hay tons	221,227	257,237	436,907	309,099	494,227	361,537
Field Peas bushels	223,989	148,576	151,828	119,345	128,841	174,987
Grass Seed cwt	3,161	5,316	11,702	5,373	14,604	8,880
Hops (a) '000 lb	2,800	3,069	2,091	3,005	3,488	2,796
Beans, French and Runner .. '000 lb	1,437	5,548	8,127	8,792	13,769	11,232
Peas, Green (b)—						
For Processing .. '000 lb	20,725	51,114	56,689	53,926	54,266	66,042
Sold in Pod .. '000 lb	721	153	101	79	135	213
Potatoes tons	98,000	76,400	73,300	79,058	72,120	67,850
Apples .. '000 bushels	5,473	8,364	6,301	7,943	7,138	7,400
Pears .. '000 bushels	463	650	404	511	451	496
Currants (Black & Red) .. '000 lb	2,966	2,936	2,715	2,160	2,638	2,063
Loganberries .. '000 lb	1,526	675	681	511	628	446
Raspberries .. '000 lb	5,254	3,502	3,240	2,502	2,629	2,812
Strawberries .. '000 lb	367	218	262	241	203	226

(a) Dry weight.

(b) Ex-shell weight.

Principal Crops

The data on acreage and production of crops are compiled, in general, to give totals for each municipality. In subsequent parts of this chapter dealing with geographical distribution, the information is presented only in Statistical Divisions; however, the component attributable to the North Central and Western Divisions (i.e. the City of Launceston and the western mining districts) is so small that they are not incorporated in the table below. Also, in the following tables, the Hobart Division has been combined with the Southern, since the aim is to give the distribution in broad outline and not in detail. (The description of Statistical Divisions is contained in Chapter 2.)

Cereals for Grain

The next table shows the geographical distribution of cereal grain growing:

Cereals for Grain: Area of Crops in Statistical Divisions, 1969-70
(Acres)

Cereals for Grain	North Western	North Eastern	North Midland	Midland	South Eastern	Hobart and Southern	Total
Barley	7,851	2,656	8,365	2,539	6,502	1,780	29,692
Oats	1,259	1,915	6,500	7,821	3,448	1,225	22,167
Rye .. ..	..	60	..	17	8	..	85
Wheat	940	537	5,025	4,677	2,731	823	14,732
Total	10,050	5,168	19,889	15,054	12,688	3,828	66,676

The area under barley as a grain crop has tended to increase in recent years, the 1959-60 acreage being only 12,396. Larger than usual wheat acreages were recorded in 1963-64 (17,562) and 1968-69 (17,394) with the 1969-70 area being slightly in excess of the average for the latest decennial period.

Hay and Green Feed

The following table shows the geographical distribution of hay and green feed crops:

**Hay and Green Feed: Area of Crops in Statistical Divisions, 1969-70
(Acres)**

Crop	North Western	North Eastern	North Midland	Midland	South Eastern	Hobart and Southern	Rest of State	Total
Hay—								
Grass and								
Clover ..	78,957	32,683	19,207	7,341	6,759	11,976	126	157,048
Oaten ..	2,617	1,221	2,610	1,241	1,108	621	9	9,425
Other ..	1,131	481	890	1,653	718	458	..	5,330
Total ..	82,704	34,384	22,707	10,234	8,585	13,055	135	171,802
Green Feed ..	26,119	25,059	15,549	22,964	9,073	4,340	80	103,181

It should be noted that the grass and clover hay area in the table (157,048 acres) relates to hay produced by mowing sown pasture. The North Western Division with the largest area devoted to sown pastures produces nearly half of the State's hay.

North Western Division predominance in acreage under hay and green feed crops can be related to the fact that it carries almost half of the State's cattle and is the principal dairying area.

The chief sources of green feed are areas sown to oats (usually about 50 to 60 per cent of total green feed acreage) and areas of grasses and clovers cut from sown pasture (13.7 per cent in 1969-70); other green feed crops are obtained from chou moellier, barley, lucerne, millet, rape, ryecorn and wheat.

Vegetables for Human Consumption

As previous acreage and production tables indicated, there has been a decline in potato growing; the next table traces the history of this crop since 1860:

Potatoes: Area Under Crop and Total Production, Selected Years

Year	Area	Production		Year	Area	Production	
		Total	Yield Per Acre			Total	Yield Per Acre
1860-61 ..	acres	tons	tons	1930-31 ..	acres	tons	tons
1870-71 ..	7,621	33,589	4.41	1940-41 ..	37,229	95,289	2.56
1880-81 ..	9,823	36,028	3.41	1944-45 (a)	37,364	114,041	3.05
1890-91 ..	10,421	32,548	3.12	1950-51 ..	81,092	345,232	4.26
1900-01 ..	20,133	73,158	3.63	1960-61 ..	31,581	124,000	3.93
1910-11 ..	23,068	93,862	4.07	1968-69 ..	10,875	39,050	3.59
1920-21 ..	26,230	70,090	2.67	1969-70 ..	11,461	72,120	6.29
	32,000	88,679	2.77		9,367	67,850	7.24

(a) Peak acreage and production year.

Potato growing was for many years a major activity in the North Western Statistical Division and even in 1969-70, 83 per cent of the acreage and 88 per cent of the production of the State's potato crop was located in that area. The size of the Tasmanian potato crop has always been influenced by the demand from other States, in particular, New South Wales. In 1951-52, over 100,000 tons were exported; annual exports from 1964-65 to 1967-68 ranged between 26,000 and 35,000 tons but in 1969-70 they were only slightly over 12,000 tons. The considerably increased yield per acre in recent years has been due mainly to the greater use of irrigation and artificial fertilisers. In 1969-70, 58 per cent of the State potato crop was irrigated compared with only three per cent ten years earlier. (See 'Technical Aspects of Rural Industry' later in this chapter.)

The decline in the export crop has been largely offset by increased opportunities for disposing of potatoes and other vegetable crops to dehydrating, canning and deep-freezing plants developed on the North-West coast and in the Scottsdale area since World War II. The main crop grown for processing in 1969-70 was green peas, its area in that year exceeding the area planted to potatoes (14,590 acres against 9,367 acres); a demand by processing plants also exists for other vegetables. In 1969-70, 1,577 acres of French and runner beans were grown compared with only 246 acres ten years earlier. The production from all but 23 acres of the 1969-70 crop was for processing factories and substantial increases are planned during the next few years in the quantity of potatoes grown for processing.

The concentration of vegetable growing in certain areas of the State is illustrated in the following table:

Vegetables for Sale for Human Consumption (a)
Area Under Selected Crops in Statistical Divisions, 1969-70
(Acres)

Crop	North Western	North Eastern	North Midland	Midland	South Eastern	Hobart and Southern	Rest of State	Total
Beans, French and Runner	1,513	47	6	..	4	6	..	1,577
Peas, Green ..	11,849	1,151	1,665	1	5	38	..	14,708
Potatoes ..	7,763	639	30	426	174	333	4	9,367
All Other Vegetables ..	1,353	588	60	33	148	458	6	2,646
Total ..	22,478	2,424	1,761	459	330	835	10	28,298

(a) Includes vegetables for processing.

Grass Seed

The geographical distribution (in acres) of areas yielding grass seed in 1969-70 was as follows: North Western, 802; North Eastern, 553; North Midland, 1,748; Midland, 709; South Eastern, 561; Hobart and Southern combined, 109; total, 4,482. The area of grass seed fluctuates widely depending on farming conditions; in 1964-65, 9,013 acres yielded seed while in 1967-68 only 2,385 acres were harvested.

Field Peas and Other Stock Feed

The geographical distribution of these crops is shown as follows:

Field Peas and Other Stock Feed (a)
Area of Crops in Statistical Divisions, 1969-70
(Acres)

Crop	North Western	North Eastern	North Midland	Midland	South Eastern	Hobart and Southern	Rest of State	Total
Field Peas—								
Blue ..	530	81	3,238	..	49	..	..	3,898
Grey and ..	634	39	788	..	296	52	..	1,808
Other ..								
Other Stock Feed—								
Turnips ..	4,625	7,571	1,996	5,185	707	615	5	20,703
Other (b)	130	107	25	7	20	..	..	288

(a) Other stock feed crops not shown in previous tables.

(b) Includes Horse Beans, 242 acres.

Hops

The principal Tasmanian industrial crop is hops, grown mainly in the Derwent Valley in the municipalities of New Norfolk and Hamilton. In 1969-70, the State's hop-bearing area was 1,395 acres.

Hop production reached a record level of 3,488,000 lb in 1968-69 and, for the first time, some growers experienced difficulties in disposing of their crop. As a result of these difficulties, some farmers in 1970 and 1971 reduced hop acreages, a number 'grubbed out' their entire area of hops, while many others failed to completely harvest their crops. This resulted in a fall in production to 2,375,000 lb for the 1971 season. In recent years, new hop varieties have been progressively introduced and their higher average yield and greater resin content have meant that production has exceeded demand. The most popular variety of hops was 'Pride of Ringwood' which accounted for 55 per cent of all hops planted in 1971 compared with 28 per cent in the previous year.

Tasmania has for many years been the principal Australian grower of hops, producing about 70 per cent of the crop. However, increased production in Victoria in recent years has further aggravated marketing problems for Tasmanian growers and in 1970 Tasmania's contribution had fallen to 62 per cent.

The next table shows details of area, production and value over a five-year period:

Hops: Area, Production and Value

Season	Number of Growers	Total Area	Production		
			Total (a)	Yield Per Bearing Acre (a)	Value
		acres	'000 lb	lb	\$'000
1966-67	106	1,556	2,091	1,425	1,568
1967-68	111	1,606	3,005	2,001	2,303
1968-69	108	1,595	3,488	2,293	2,673
1969-70	102	1,472	2,796	2,004	2,143
1970-71	81	1,310	2,375	2,127	p1,820

(a) Dry weight.

Orchard Fruit and Small Fruit

The geographical distribution of orchards and small fruit areas is shown below:

**Area of Orchard Fruit and Small Fruit (Bearing and Non-Bearing)
in Statistical Divisions, 1969-70
(Acres)**

Kind	North Western	North Eastern	North Midland	Midland	South Eastern	Hobart and Southern	Rest of State	Total
Orchard Fruit	955	3,535	6	2	363	14,826	..	19,687
Small Fruit ..	10	20	1	204	19	1,213	..	1,466

Orcharding is heavily concentrated in and around the Huon Valley (Southern Statistical Division); the other main area is in the Tamar Valley (North Eastern Division). Small fruit growing is almost entirely confined to the Derwent and Huon Valleys.

Production of small fruits in the State has dropped by two-thirds over the last 20 years. In spite of this, Tasmania's proportion of the 1969-70 Australian total production of small fruit was 37 per cent; for raspberries and black and red currants it was 92 per cent. Part of the 1967-68 production decline, shown in the following table, is attributable to the 1967 bush fires in Southern Tasmania.

Principal Small Fruits: Area and Production

Year	Currants (Black & Red)		Loganberries		Raspberries		Strawberries	
	Bearing Area	Pro-duction	Bearing Area	Pro-duction	Bearing Area	Pro-duction	Bearing Area	Pro-duction
	acres	'000 lb	acres	'000 lb	acres	'000 lb	acres	'000 lb
1948-49 (a) ..	2,006	6,030	213	837	2,086	7,603	250	871
1965-66 ..	765	2,936	108	675	651	3,502	74	218
1966-67 ..	695	2,715	139	681	577	3,240	67	262
1967-68 (b) ..	548	2,160	94	511	452	2,502	66	241
1968-69 ..	590	2,638	125	628	484	2,629	67	203
1969-70 ..	577	2,063	102	446	517	2,812	65	226

(a) Representative year from period when small fruit areas were at record level.

(b) Part of 1967-68 decline due to bushfires in Southern Tasmania.

On the average over recent years, the value of the apple crop alone has represented one-third of the gross value of the State's total agricultural production. The next table gives recent details of area, production and average yield:

Apples: Area and Production

Season	Area		Number of Trees		Production		
	Bearing	Non-Bearing	Bearing	Non-Bearing	Total	Yield	
						Per Acre	Per Tree
	acres	acres	'000	'000	'000 bush	bush	bush
1965-66	15,454	2,935	2,266	430	8,364	541	3.69
1966-67	15,235	3,305	2,257	490	6,301	414	2.79
1967-68	14,945	3,433	2,228	512	7,943	531	3.56
1968-69	14,487	3,672	2,191	555	7,138	493	3.26
1969-70	14,343	3,503	2,150	525	7,400	516	3.44

After World War I, apple acreage was 26,000 acres but the decline in area since then has been more than offset by greatly increased average yield per acre. In 1969-70 Tasmania had only nineteen per cent of the total area in Australia devoted to apples but because of its much higher average yields it produced 33 per cent of the Australian crop. The higher yields which are more than twice those in some States can be attributed to several factors including the greater use of irrigation. In the last decade the irrigated area of orchard and small fruit has increased from ten to 36 per cent of the total crop.

In the 1967-68 season, devaluation of sterling threatened to reduce the return to overseas exporters and the Commonwealth Government outlined a scheme in May 1968, the main provision being 50 cents devaluation compensation for each bushel of apples exported and 53 cents for each bushel of pears exported. The compensation was continued for the 1968-69 season, but at the reduced rate of 40 cents per bushel for apples and 50 cents for pears. In 1969-70 compensation was paid at the same rate as in the 1967-68 season.

A wide variety of apples is produced in Tasmania but many only in small quantities. Of the total production of 7,400,000 bushels in 1969-70, four varieties accounted for 68 per cent (Democrat, 20 per cent; Granny Smith, fourteen per cent; Jonathan, eighteen per cent and Sturmer Pippin, sixteen per cent).

The following table shows trees planted during 1969 and 1970 in: (i) new orchard areas; and (ii) existing orchard areas as replacements for trees removed:

Apple and Pear Trees Planted according to Variety

Variety	Number of Trees Planted					
	1969			1970		
	In Existing Orchards (a)	In New Orchards	Total	In Existing Orchards (a)	In New Orchards	Total
Apples—						
Jonathan ..	275	320	595	644	50	694
Sturmer Pippin ..	462	140	602	166	..	166
Democrat ..	3,946	6,140	10,086	4,125	2,776	6,901
Granny Smith ..	7,551	8,774	16,325	12,804	5,051	17,855
Cleopatra ..	155	..	155	30	93	123
Golden Delicious	5,531	7,789	13,320	4,643	6,562	11,205
Red Delicious ..	8,352	10,543	18,895	16,519	16,770	33,289
Other ..	2,644	2,645	5,289	3,689	4,460	8,149
Total ..	28,916	36,351	65,267	42,620	35,762	78,382
Pears—						
Packhams Triumph	681	100	781	1,402	1,540	2,942
Winter Cole ..	134	..	134	..	..	..
Beurre Bosc ..	16	..	16	65	..	65
Other ..	80	..	80	80	100	180
Total ..	911	100	1,011	1,547	1,640	3,187

(a) Trees planted as replacements for trees removed.

Figures for the last three years indicate a trend towards greater density of apple trees per acre; 200 trees per acre in 1968, 252 in 1969 and 263 in 1970.

'All Other Crops'

In the table 'Area of Principal Crops' the item 'All Other Crops', (3,355 acres in 1969-70) includes oil poppies, lavender, flower seeds, cut flowers, a variety of crops grown for seed, and green manure crops (e.g. lupins).

LIVESTOCK

Introduction

This subject is dealt with in two parts: (i) Numbers of Livestock on Rural Holdings; and (ii) Livestock Products.

The first part needs no definition but the second part (Livestock Products) requires explanation. In relation to the various types of livestock, the following products are included:

Cattle—meat, milk, butter, cheese. *Sheep*—meat, wool.

Pigs—meat.

Poultry—meat, eggs.

Butter and cheese, although regarded as manufacturing industry products, are included in the section 'Livestock Products' which follows later in the Chapter because the pattern and scale of livestock farming is closely linked to the processing of these products.

Number of Livestock on Rural Holdings

The following summary table shows the numbers of livestock on rural holdings since 1860:

Livestock on Rural Holdings: Selected Years

Year	Horses	Cattle	Sheep	Pigs
	no.	no.	'000	no.
1860 (a)	21,034	83,366	1,701	31,290
1870	22,679	101,459	1,350	49,432
1880	25,267	127,187	1,794	48,029
1890	31,165	162,440	1,619	81,716
1900	31,607	165,516	1,684	68,291
1910	41,388	201,854	1,788	63,715
1919-20	39,452	214,442	1,781	35,530
1929-30 (b) ..	34,336	214,643	2,091	52,899
1939-40 (b) ..	29,605	252,484	2,677	44,941
1949-50 (c) ..	21,197	274,740	2,170	35,841
1959-60	10,512	375,342	3,494	67,118
1968-69	n.a.	585,718	4,395	95,363
1969-70	6,478	646,439	4,560	111,275
Tasmanian numbers as proportion of Australian total (1969-70) ..	1.4 per cent	2.9 per cent	2.5 per cent	4.6 per cent

(a) At varying dates to 1919-20.

(b) At 31 December.

(c) At 31 March from 1949-50.

Cattle

Classification

The traditional way of classifying cattle has been to call them either 'dairy' or 'beef' cattle but this has possibly been confusing since the terms may refer either to *purpose* or *breed*. In the period 1942-43 to 1962-63, the annual farm census required this dissection but the terms were not defined. In 1963-64, the cattle questions were amended as follows: (i) bulls were to be classified by *breed*; (ii) 'house cows' were to be specified separately; and (iii) all other cattle were to be classified according to *purpose* i.e. milk production or meat production. The results of the 1969-70 farm census are given, the following table showing the way in which the questions were asked and providing an analysis in which it is possible to isolate the number of cows and heifers *directly* associated with dairying (i.e. the fifth, sixth and seventh items on the collection form).

Description of Cattle on Rural Holdings, 31 March 1970
(Form Used for Collection)

Cattle and Calves	Bulls used or intended For Service	Dairy Breed Bulls (1 year and over) .. Beef Breed Bulls (1 year and over) .. Bull Calves (under 1 year) intended for service— Dairy Breed Bull Calves Beef Breed Bull Calves	2,833 7,979 1,429 2,975
	Cows and Heifers used or intended for production (for sale) of Milk and Cream	Cows—In Milk and Dry at 31 March.. Heifers (1 year and over) Heifer Calves (under 1 year)	155,040 37,919 39,578
	House Cows (in milk and dry) and Heifers (one year and over) being kept primarily for own milk supply		4,646
	Cattle and Calves (not included above) mainly for Meat Production	Cows and Heifers (1 year and over) .. Calves (under 1 year) including Vealers, Bobby Calves, etc. Other (1 year and over) i.e. Steers, Bullocks, etc.	181,231 156,606 56,203
	Total Cattle and Calves for all Purposes ..		646,439

The total of 'Cows and Heifers used or intended for production (for sale) of Milk and Cream' in the previous table (232,537) can be associated directly with the dairying industry. Similarly the total of 'Cattle and Calves, mainly for Meat Production' (394,040) can be associated directly with the beef cattle industry. Between 1965 and 1970 there was an increase of 93 per cent in the numbers associated with the beef cattle industry and only a one per cent increase in the dairying industry. Preliminary estimates for 1970-71 indicate very little change in dairy cow numbers but another substantial increase in cattle for meat production.

The previous change in classification makes it impossible to compare, in full detail, the description of cattle in 1964-65 and subsequent years with descriptions reported in previous years but the following table is compiled to show broad groups regarded as generally comparable:

Description of Cattle on Rural Holdings at 31 March

Year	Number of Holdings with Cattle	Bulls (1 Year and Over)	Cows and Heifers (1 Year and Over)	Calves (Under 1 Year)	Other	Total
1950	9,759	6,186	158,424	60,601	49,529	274,740
1955	9,668	7,002	194,016	78,252	40,147	319,417
1960	9,031	7,237	229,162	100,849	38,094	375,342
1965	8,384	(a) 8,311	283,955	119,455	39,750	451,471
1966	8,667	8,816	298,954	141,536	42,611	491,917
1967	8,598	9,094	315,316	145,928	51,326	521,664
1968	8,631	9,660	331,451	162,460	60,155	563,726
1969	8,545	10,049	351,685	166,604	57,380	585,718
1970	8,405	10,812	378,836	200,588	56,203	646,439

(a) The specification of 'Bull Calves (under 1 year)' from 1963-64 may have affected the comparability of the series.

The distribution of holdings with cattle is shown below:

Distribution of Cattle in Statistical Divisions, 31 March 1970

Particulars	North Western	North Eastern	North Mid-land	Mid-land	South Eastern	Hobart and Southern	Rest of State	Total
Holdings with Cattle	3,610	1,479	772	490	467	1,567	20	8,405
Total Cattle (All Descriptions) ..	307,635	140,408	68,787	58,639	22,573	46,936	1,461	646,439
Cows in Milk and Dry (a) ..	106,107	27,899	11,003	2,512	1,891	5,611	17	155,040
Heifers (1 Year and Over) (a) ..	24,387	6,679	3,121	891	740	2,093	8	37,919
Heifer Calves (Under 1 Year) (a) ..	27,066	6,414	3,112	793	683	1,507	3	39,578
Total (a) ..	157,560	40,992	17,236	4,196	3,314	9,211	28	232,537
Bulls (1 Yr & Over)-								
Dairy Breeds ..	1,888	442	265	32	62	143	1	2,833
Beef Breeds ..	2,724	1,869	1,141	1,157	340	729	19	7,979

(a) 'Cows and Heifers used or intended for production (for sale) of Milk and Cream'. The total (232,537) can be associated directly with the dairying industry.

Breeds of Cattle

The main breeds of dairy cattle in Tasmania are Jersey, Friesian and Ayrshire with small numbers of milking Shorthorn and Guernsey, while beef breeds are Hereford, Aberdeen Angus, Shorthorn and Devon.

A recent development, associated with the trend in the beef industry towards the production of lean carcasses, is the production of meat from dairy breed calves. Dairy farmers retain male calves and, in some cases, heifer calves for sale as vealers (calves aged from nine to twelve months). The dairy breed best suited to this form of meat production is the Friesian with its high birthweight (85 to 95 lb) and inherent ability to make rapid liveweight gains. Farmers rearing calves from dairy herds for sale as meat vealers normally mate their cows to Friesian or to recognised beef breed bulls. In recent years, new cattle lines such as the Brahman and Murray Greys have been introduced by farmers wishing to utilise the advantages of cross-breeding.

Sheep

The table below shows the trend of increasing sheep numbers on rural holdings since the end of World War II:

Sheep on Rural Holdings At 31 March ('000)

Year	Sheep	Year	Sheep	Year	Sheep	Year	Sheep
1946	1,926	1953 ..	2,422	1959 ..	3,536	1965 ..	3,793
1948	2,087	1954 ..	2,465	1960 ..	3,494	1966 ..	4,127
1949	2,160	1955 ..	2,595	1961 ..	3,439	1967 ..	4,321
1950	2,170	1956 ..	2,673	1962 ..	3,532	1968 ..	4,428
1951	2,182	1957 ..	2,943	1963 ..	3,570	1969 ..	4,395
1952	2,338	1958 ..	3,298	1964 ..	3,600	1970 ..	4,560

The next table shows the geographical distribution of sheep, also the various descriptions and details of the lambing season:

Description of Sheep at 31 March 1970 and Lambing, 1969 Season, in Statistical Divisions

Particulars	North West-ern	North East-ern	North Mid-land	Midland	South East-ern	Hobart and South-ern	Rest of State	Total
Holdings with Sheep	1,416	865	713	602	593	621	5	4,815
Sheep—								
Rams (1 Year and Over) ..	7,133	8,042	11,604	14,303	6,349	2,187	2	49,620
Breeding Ewes ..	292,347	336,714	413,738	567,805	303,598	111,924	75	2,026,201
Other Ewes (1 Year and Over)	20,259	32,675	39,496	62,638	27,818	12,211	7	195,104
Wethers (1 Year and Over) ..	41,172	169,848	179,524	429,336	179,987	64,130	38	1,064,035
Lambs and Hoggets (Under 1 Year) ..	159,069	212,897	232,031	399,349	171,494	49,807	..	1,224,647
Total ..	519,980	760,176	876,393	1,473,431	689,246	240,259	122	4,559,607
Lambing, 1969 Season—								
Ewes Mated ..	277,455	307,799	388,293	523,178	240,313	94,032	260	1,831,330
Lambs Marked—Number ..	275,617	288,223	357,294	489,517	216,803	87,137	250	1,714,841
Marking Ratio (a) ..	99.3	93.6	92.0	93.6	90.2	92.7	96.2	93.6

(a) Lambs marked as percentage of ewes mated; lamb mortality is one of the factors affecting marking ratios.

The following table summarises the descriptions of sheep on a State basis and also gives details of lambing:

Description of Sheep at 31 March and Details of Lambing: Summary

Particulars	1960	1965	1966	1967	1968	1969	1970
Holdings with Sheep ..	5,950	5,114	5,276	5,224	5,294	5,096	4,815
Sheep ('000)—							
Rams (1 Yr and Over)	41	43	45	47	49	50	50
Breeding Ewes ..	1,520	1,739	1,826	1,997	1,954	2,023	2,026
Other Ewes (1 Year and Over) ..	235	157	172	164	203	174	195
Wethers (1 Year and Over) ..	860	943	951	1,022	1,072	1,041	1,064
Lambs and Hoggets (Under 1 Year) ..	838	910	1,133	1,090	1,150	1,105	1,225
Total	3,494	3,792	4,127	4,321	4,428	4,395	4,560
Lambing (a)—							
Ewes Mated .. ('000)	1,461	1,478	1,651	1,688	1,779	1,736	1,831
Lambs Marked—							
Number .. ('000)	1,354	1,374	1,594	1,574	1,522	1,561	1,715
Marking Ratio (b)	92.7	93.0	96.5	93.3	85.6	89.9	93.6

(a) In the season preceding the year named.

(b) Lambs marked as percentage of ewes mated.

Breeds of Sheep

The Merino is the mainstay of the Australian wool industry and accounts for over 75 per cent of the Australian sheep population. However, in Tasmania the predominant sheep breeds are Polwarth and Corriedale; both were originally developed from Merino cross-breeds. A new sheep breed, the 'Cormo', has been developed in Tasmania to suit local conditions; the aim is to produce a highly-fertile breed having a high yield of fine wool and good body conformation.

Over the last ten years, the breeds of sheep reported by growers have shown a trend in favour of Polwarths. Corriedale numbers, after showing a small but consistent increase for some years, are now exhibiting an opposite trend. The following table shows the percentage of the main breeds of sheep (including rams):

**Proportion of Breeds of Sheep at 31 March
(Per Cent)**

Breed	1959	1965	1966	1967	1968	1969	1970
Polwarth	29.8	38.6	39.3	39.9	40.5	41.7	42.5
Corriedale	14.7	17.8	18.6	19.5	18.0	17.3	15.4
Merino	9.2	9.3	8.7	8.0	7.1	7.7	7.9
Romney Marsh.. ..	2.5	2.2	2.1	2.2	2.0	1.9	1.2
Other Breeds (a) ..	5.0	3.3	3.4	3.0	3.0	3.3	3.9
Comebacks	13.2	11.1	10.0	10.5	10.7	11.1	12.6
Crossbreeds	25.6	17.7	17.9	17.0	18.7	17.0	16.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Recognised breeds of sheep which individually, in 1970, accounted for less than one per cent of all sheep; includes Cheviot, Dorset Horn, Border Leicester, English Leicester, Ryeland, Southdown, Suffolk, Lincoln, Poll Dorset, Shropshire and Cormo.

The majority of all breeds of sheep are run on improved pastures. However, particularly in the Midlands, use is made of considerable areas of unimproved 'run' country for Polwarths, Comebacks and Merinos. The Central Plateau also provides summer grazing, particularly for wethers.

Pigs

The geographical distribution of pigs, by statistical division, is shown in the next table:

Distribution of Pigs in Statistical Divisions at 31 March 1970

Particulars	North West- ern	North East- ern	North Mid- land	Mid- land	South East- ern	Hobart and South- ern	Rest of State	Total
Holdings with Pigs ..	1,129	519	223	85	111	229	6	2,302
Pig Numbers—								
Boars	1,121	445	166	28	66	147	5	1,978
Breeding Sows ..	9,588	3,498	1,446	165	629	1,277	26	16,629
Other (a)	54,652	20,264	7,847	629	2,412	6,713	151	92,668
Total Pigs	65,361	24,207	9,459	822	3,107	8,137	182	111,275

(a) Includes baconers and porkers, backfatters, stores, weaners, suckers and slips.

The concentration of pigs in the North Western Statistical Division has been related to the fact that this is the main dairying area and that pig-raising has traditionally been associated with dairying. This association still exists but pigs are usually no longer a sideline on dairy farms. Since the advent of bulk milk collection, the dairyman has had an alternative market for skim milk: thus, while a steady increase in the pig population has taken place, a decline in the number of pig producers has occurred. On those farms still producing pig meat, pig numbers have increased and in many cases the income from pigs often equals that from cows. Pig meat prices have remained at a favourable level, compared with other farm produce, over the last five to six years and this, combined with depressed prices in the wool industry, has attracted some fine-wool and fat-lamb producers into pig-raising. A change to the intensive system of pig production, in which all pigs are permanently housed, is now becoming evident.

Pig Population

The pig population at 31 March each year is not, in itself, a very significant figure. It is possible for a sow to produce two litters within the one year and the offspring to number more than ten in each litter. It follows, therefore, that the real measure of activity in pig-raising is not so much the size of the pig herd at a particular point in time but rather the number of pigs slaughtered and the dressed carcass weight of the meat so produced; such information is given in the 'Livestock Products' section of this Chapter.

In the previous table, the most significant item is the number of breeding sows. A sow can be mated at nine or ten months and the gestation period is a mere four months. In recent years, there has been a tendency to wean piglets at a much younger age than the traditional eight weeks; this has been made possible by a better knowledge of the nutritional requirements of the young pig. Early weaning calls for more skilled management but has the advantages of avoiding heavy weight loss by the sow and reducing the period between litters.

The following table shows, in summary form, the number of holdings with pigs and pig numbers according to the main descriptions:

Pigs on Rural Holdings at 31 March

Year	Holdings with Pigs	Boars	Breeding Sows	Other (a)	Total Pigs
1950	<i>n.a.</i>	1,106	5,451	29,284	35,841
1955	4,235	1,608	9,065	47,709	58,382
1960	3,681	2,075	10,730	54,313	67,118
1965	3,315	2,327	14,578	75,116	92,021
1967	2,749	1,972	13,148	70,534	85,654
1968	2,545	1,840	13,227	71,450	86,517
1969	2,400	2,001	15,213	78,149	95,363
1970	2,302	1,978	16,629	92,668	111,275

(a) Includes baconers and porkers, backfatters, stores, weaners, suckers and slips.

LIVESTOCK PRODUCTS

Value of Production

The statistics in the following section refer, in the main, to quantities of livestock products. The associated values will be found under 'Value of Production' in Chapter 7.

Wool

In a report in 1836, the Colonial Secretary, John Montagu, described the early export trade in wool: 'It appears that the quantity of Wool imported into England from N.S.W. and Van Diemen's Land in 1810 was 167 lbs; in 1820, it amounted to 99,415 lbs; in 1825, to 323,995 lbs. From 1827, the returns for the two Colonies are separated.'

Prices in 1824 varied from two and a half cents to five cents per lb but, by 1836, they had increased to range from fifteen to 25 cents. The progress of wool production in the remainder of the 19th century can be gathered from the following table (compiled from export figures, since production details were not collected for the whole period):

Exports of Wool (a) (Overseas and Interstate): Historical Summary
(⁰⁰⁰ lb)

Year	Quantity	Year	Quantity	Year	Quantity
1835	2,429	1860	4,538	1885	5,774
1840	3,637	1865	4,924	1890	8,984
1845	3,662	1870	4,147	1895	7,223
1850	5,855	1875	6,199	1900	6,754
1855	5,858	1880	9,025	1905	9,566

(a) The figures relate basically to greasy wool but a small proportion of washed wool is included in the later years.

Unfortunately the above series cannot be carried through the period 1910-1922 due to lack of interstate trade figures, or through the period 1922-1951 because 'pure' greasy wool export figures (i.e. separated from scoured wools and tops and noils) are not available. Export details for recent years are as follows:

Exports of Wool, Greasy (Overseas and Interstate)
(⁰⁰⁰ lb)

Year	Quantity	Year	Quantity	Year	Quantity
1955-56 ..	18,491	1960-61 ..	24,403	1965-66 ..	34,376
1956-57 ..	20,707	1961-62 ..	27,209	1966-67 ..	35,802
1957-58 ..	23,659	1962-63 ..	26,278	1967-68 ..	30,854
1958-59 ..	25,167	1963-64 ..	25,086	1968-69 ..	34,830
1959-60 ..	27,977	1964-65 ..	30,329	1969-70 ..	36,404

It should be noted, however, that not all Tasmanian wool is exported, some being used, after scouring, etc., for manufacturing purposes within the State; any locally processed wool exported would not be classified under greasy wool.

Wool Production

For statistical purposes, the total amount of wool produced in the State in any year consists not only of the 'clip' (shorn wool) but also of the wool on skins, irrespective of whether it is actually removed by local fellmongers or is exported on skins. Production figures in recent years were:

Wool Production (a) Since 1958-59
(^{'000} lb)

Year	Shorn Wool (including Crutchings)	Fell- mongered and Dead Wool, and Wool Exported on Skins	Total	Year	Shorn Wool (including Crutchings)	Fell- mongered and Dead Wool, and Wool Exported on Skins	Total
1958-59	28,892	3,742	32,634	1964-65	35,619	4,052	39,671
1959-60	29,091	4,509	33,600	1965-66	36,948	4,910	41,858
1960-61	27,881	3,989	31,870	1966-67	38,687	4,466	43,153
1961-62	30,039	4,430	34,469	1967-68	33,700	4,608	38,308
1962-63	30,318	4,243	34,561	1968-69	41,789	5,167	46,956
1963-64	29,597	4,410	34,007	1969-70	42,790	5,405	48,195

(a) Fellmongered wool converted to greasy wool equivalent weight.

In the previous tables, dealing with exports, a gap exists between 1905 and 1950-51 but production statistics are available as follows:

Total Wool Production (a): Historical Summary
(^{'000} lb)

Year	Production	Year	Production	Year	Production
1905	11,753	1929-30 ..	15,000	1954-55 ..	23,797
1910	13,339	1934-35 ..	14,035	1959-60 ..	33,600
1914-15 ..	12,049	1939-40 ..	18,334	1964-65 ..	39,671
1919-20 ..	13,069	1944-45 ..	16,324	1968-69 ..	46,956
1924-25 ..	12,483	1949-50 ..	16,958	1969-70 ..	48,195

(a) Total wool production, including shorn, dead and fellmongered wool and wool exported on skins; fellmongered converted to greasy wool equivalent weight.

Greasy Wool Equivalent

Fellmongered wool included in previous total production figures has been attributed a weight as though it were *greasy* wool, although the original information is received in terms of the weight of *scoured* wool recovered by fellmongering. The method of conversion is simple: if 100 lb of *greasy* yields 60 lb of *clean*, and 100 lb of *scoured* (fellmongered) yields 80 lb of *clean*, it follows that 100 lb of *scoured* (fellmongered) is equivalent to 133 lb of *greasy*. The factors in the example are only approximations of those which are obtained from woolscourers (*greasy/clean* relativity) and fellmongers (*scoured/clean* relativity). Conversion of such wool to a greasy wool equivalent is necessary to put all the components of total production on a common basis.

Shorn Wool

The principal months for shearing in Tasmania are October, November and December, but during the last two or three years an increasing number of farmers have been shearing outside the traditional spring period. Such practices not only facilitate flock and property management but also provide more continuous employment for shearers and shed hands. The following table gives shearing details for recent years:

Shearing and Shorn Wool Obtained

Year Ended 31 March	Numbers Shorn			Shorn Wool Obtained			Average Yield		
	Sheep	Lambs	Total	From Sheep (a)	From Lambs	Total	From Sheep (a)	From Lambs	Total
	'000	'000	'000	'000 lb	'000 lb	'000 lb	lb	lb	lb
1960	3,003	831	3,834	27,321	1,770	29,091	9.10	2.13	7.59
1966	3,339	979	4,318	34,524	2,424	36,948	10.34	2.48	8.56
1967	3,542	975	4,517	36,210	2,477	38,687	10.22	2.54	8.56
1968	3,673	899	4,572	31,648	2,052	33,700	8.62	2.28	7.37
1969	3,703	928	4,632	39,317	2,472	41,789	10.62	2.66	9.02
1970	3,753	1,039	4,792	40,145	2,645	42,790	10.70	2.54	8.93

(a) Includes crutchings from sheep.

The next table shows the geographical distribution of shorn wool production:

Shearing and Shorn Wool Obtained (a) in Statistical Divisions, 1969-70

Particulars	North West- ern	North East- ern	North Mid- land	Mid- land	South East- ern	Hobart and South- ern	Rest of State	Total
NUMBER SHORN ('000)								
Sheep	369	622	767	1,257	540	198	..	3,753
Lambs	117	179	221	351	132	40	..	1,039
SHORN WOOL OBTAINED ('000 lb)								
From—Sheep	3,692	6,709	8,220	14,164	5,430	1,926	3	40,145
Lambs	412	561	528	767	268	109	..	2,645
Total	4,103	7,270	8,748	14,931	5,698	2,035	3	42,790
AVERAGE YIELD (b) lb								
Sheep	10.01	10.79	10.72	11.27	10.06	9.72	9.21	10.70
Lamb	3.52	3.14	2.39	2.18	2.03	2.73	..	2.54

(a) Includes crutchings from sheep.

(b) Per sheep or lamb shorn.

Wool Auctions

The bulk of Tasmanian shorn wool is marketed in Hobart and Launceston at auctions organised by the wool-selling brokers. Prior to 1969-70 three auction sales were held per year i.e. November, February and May. Approximately one-third of the season's clip was auctioned at the first sale in excess of fifty per cent at the February sale and the remainder in May.

As from 1969-70 a four-sale season was introduced with sales in October, December, February and June. This move had the effect of creating a more equitable distribution of sales over the selling season although the February sale still remains the most important accounting for 37 per cent of the 1970-71 sales compared with 47 per cent in 1968-69.

During 1970-71, fifteen per cent was auctioned in October; 24 per cent in December; 37 per cent in February and 24 per cent in June. In addition, some wool however, is bought direct from growers by dealers and by local manufacturers of woollen goods. A small proportion of the State's wool is marketed at Victorian auctions, growers on King Island and Flinders Island tend to use this outlet because of sea transport factors.

Although wool prices have been at a lower level in recent years, the price decline has been more pronounced for wools of 58s count and stronger. Many woolgrowers have therefore decided to produce a finer type of wool resulting in an increasing number of ewes being mated with Merino rams.

The following table shows the average price of shorn greasy wool sold at Tasmanian auctions in selected years since World War II and also the value of all wool produced. The record price (150.05 cents) can be associated with the Korean War and strategic stockpiling but it is significant that the 1969-70 price (39.88 cents) is the lowest recorded since 1946-47. Even lower prices are expected for 1970-71 (preliminary figures indicate an average of 33.50 cents).

Tasmanian Average Auction Price and Total Value of Wool Produced

Year	Average Auction Price per lb of Shorn Greasy Wool	Total Value of Wool Produced (a)	Year	Average Auction Price per lb of Shorn Greasy Wool	Total Value of Wool Produced (a)
	cents	\$'000		cents	\$'000
1946-47 ..	23.00	3,880	1961-62 ..	48.62	15,752
1948-49 ..	46.92	7,530	1962-63 ..	55.12	17,772
1950-51 ..	150.05	24,226	1963-64 ..	67.40	21,352
1952-53 ..	67.42	12,758	1964-65 ..	49.35	19,050
1954-55 ..	63.75	14,464	1965-66 ..	56.20	22,405
1956-57 ..	71.82	19,948	1966-67 ..	50.85	20,983
1958-59 ..	43.99	13,688	1967-68 ..	43.72	15,609
1959-60 ..	51.62	16,508	1968-69 ..	47.90	21,180
1960-61 ..	48.18	14,458	1969-70 ..	39.88	18,081

(a) Includes value of shorn wool, fellmongered and dead wool and estimated value of wool exported on skins. Excludes profits of \$3,201,510 arising from the War-time Wool Disposals Plan and distributed to growers in the period 1949-50 to 1954-55.

The preceding price series refers only to shorn greasy wool sold at auction. In arriving at the value series for all wool produced, account is taken not only of wool sold at auction but also of direct growers' sales to dealers, manufacturers and fellmongers plus estimated value of wool exported on skins.

Classification of Greasy Wool Sold at Auction

The following information is compiled by the Wool Statistical Service of the Australian Wool Board on the basis of catalogues of auction sales. 'Quality' (64s, 60s, 58s, etc.) is a measure of the fineness of wool for spinning purposes. Broadly, it means the maximum number of hanks of yarn, each of 560 yards in length, which can be spun from one pound of combed wool. For instance, wool of 64s quality is of a fineness and texture which will produce 64 hanks, each of 560 yards, from one pound of tops (combed wool) of that particular wool.

The next table shows the proportions of each quality of wool sold at auction for recent years:

Classification of Greasy Wool Sold at Tasmanian Auctions According to Quality
(Source: Australian Wool Board)

Predominating Quality	Proportion of Each Quality (Per Cent)					
	1959-60	1965-66	1966-67	1967-68	1968-69	1969-70
70s and Finer	5.5	5.2	4.5	5.2	4.9	4.8
64/70s	2.6	2.3	2.4	2.1	2.1	1.6
64s	3.9	3.2	3.1	3.9	2.9	2.6
64/60s	0.5	0.7	0.6	0.7	0.6	0.3
60/64s	9.2	8.7	6.6	9.5	7.2	6.0
60s and 60/58s	17.4	17.3	15.3	17.6	16.3	15.9
Total 60s and Finer	39.1	37.4	32.5	39.0	34.0	31.2
58s	23.7	29.4	31.7	27.4	30.4	31.9
56s	20.1	19.8	20.4	18.2	19.9	18.4
50s	10.2	8.1	9.3	8.3	9.8	11.2
Below 50s	4.9	3.3	3.9	3.6	4.1	5.2
Oddments	2.0	2.0	2.2	3.5	1.8	2.1
Total All Wool	100.0	100.0	100.0	100.0	100.0	100.0

Clean Wool Yield

The Tasmanian proportion of auctioned greasy wool classified as '60s and finer' in recent years has ranged from 31 to 44 per cent whereas the corresponding Australian proportion exceeds 70 per cent. In the matter of price, however, the Tasmanian auction average is usually a few cents above the Australian auction average. Tasmanian averages, with Australian equivalents in brackets, have been: 1966-67, 50.85c (47.38c); 1967-68, 43.72c (41.75c); 1968-69, 47.90c (44.67c); 1969-70, 39.88c (37.55c). This apparent contradiction is explained by taking into account a second factor, not included in the foregoing quality analysis, namely the yield of clean wool that can be obtained from greasy wool. In respect of this factor, Tasmanian wools tend to yield higher than Australian; both natural and artificial environmental factors operate to the advantage of the Tasmanian clip. Evidence of this peculiarity of Tasmanian wool is provided in the next table:

Average Clean Yield of Wool Clip, Tasmania and Other Australian States
(Source: Australian Wool Board)

State of Sale (a)	Percentage of Clean Yield from Greasy Wool					
	1959-60	1965-66	1966-67	1967-68	1968-69	1969-70
N.S.W.	56.37	55.86	56.19	55.91	56.52	56.27
Victoria	59.35	58.98	59.72	58.70	59.58	59.83
Queensland	55.26	54.50	54.68	54.68	54.65	53.15
S.A.	53.10	53.07	54.00	52.53	55.14	53.98
W.A.	54.92	54.94	55.55	55.01	56.39	54.17
Tasmania	63.08	62.82	62.99	62.14	63.66	63.50
Australia	56.73	56.38	56.94	56.13	57.10	56.61

(a) Wool from other Australian States is not sold at Tasmanian auctions so, for Tasmania, 'State of Sale' and 'State of Origin' are virtually the same except that some wool from Tasmania (mainly King and Flinders Islands) is sold at Victorian auctions.

As the above figures suggest, Tasmanian wool is freer from dust and vegetable matter than wool produced in the other States.

While the proportion of fine wool (60s and finer) is comparatively low in the Tasmanian clip (since the State is historically and climatically a producer of crossbred wool), growers offering '60s and finer' sell a high proportion of superfine Merino wool at premium prices; this factor also operates to raise Tasmanian average auction prices above the Australian average.

Meat

Slaughtering

An obvious starting point in any description of meat production is the slaughtering of livestock for human consumption. To fully record the level of this activity, statistics should deal with operations in abattoirs, other slaughtering establishments and factories; slaughtering on farms also needs to be taken into account. Information on this complete basis did not become available before 1912, previous statistics relating only to slaughtering in Hobart and Launceston. The following table has been compiled to give an indication of slaughtering activity from 1912 to the present day:

Stock Slaughtered (a) For Human Consumption: Historical Summary ('000)

Year	Cattle and Calves	Sheep and Lambs	Pigs	Year	Cattle and Calves	Sheep and Lambs	Pigs
1912 ..	29	216	16	1954-55 ..	75	643	79
1915 ..	32	309	32	1959-60 ..	145	1,166	115
1924-25 ..	36	276	55	1964-65 ..	174	987	135
1929-30 ..	35	342	64	1966-67 ..	170	1,159	149
1934-35 ..	38	349	51	1967-68 ..	172	1,125	143
1939-40 ..	48	461	73	1968-69 ..	178	1,241	139
1944-45 ..	47	509	58	1969-70 ..	178	1,297	160
1949-50 ..	58	508	51	1970-71 ^p ..	161	1,391	169

(a) In all registered slaughtering establishments and on farms.

The next table, compiled on the same basis, analyses the items 'Cattle and Calves' and 'Sheep and Lambs':

Stock Slaughtered (a) for Human Consumption ('000)

Year	Cattle and Calves				Sheep and Lambs			Pigs
	Bulls, Bullocks & Steers	Cows and Heifers	Calves	Total	Sheep	Lambs	Total	
1959-60 ..	47	57	41	145	505	661	1,166	115
1964-65 ..	53	71	50	174	425	562	987	135
1965-66 ..	47	61	47	154	567	597	1,164	146
1966-67 ..	52	67	51	170	552	607	1,159	149
1967-68 ..	58	66	48	171	600	525	1,125	143
1968-69 ..	68	64	45	178	568	673	1,241	139
1969-70 (b) ..	79	66	33	178	608	689	1,297	160
1970-71 ^p ..	78	61	22	161	714	676	1,391	169

(a) In all registered slaughtering establishments and on farms.

(b) In 1969-70, the farm component of total livestock slaughtered was: cattle and calves, 773; sheep and lambs, 83,574; pigs, 1,571.

Meat Production

Slaughtering statistics in the previous two tables suggest that meat production has been relatively stable in the last few years; however, statistics of actual carcass weight of stock slaughtered provide a more precise measure of actual meat production and annual trends. The necessary weight data are collected from abattoirs, factories and licensed slaughterhouses (including 'country butchers'); in the case of livestock killed on farms, only the numbers are available and the resulting carcass weight has to be estimated. Statistics in terms of carcass weight cover the same field as the previous tables on slaughtering. The following table shows details since 1924-25:

Production of Meat: Historical Summary
(⁰⁰⁰ Tons—Carcass Weight)

Year	Beef and Veal	Mutton and Lamb	Pigmeat (a)	Total Meat	Year	Beef and Veal	Mutton and Lamb	Pigmeat (a)	Total Meat
1924-25 ..	8.1	5.0	2.5	15.6	1959-60	23.1	20.8	5.4	49.3
1929-30 ..	8.0	6.0	2.8	16.8	1964-65	26.3	18.1	6.6	51.0
1934-35 ..	8.1	6.0	2.3	16.4	1966-67	24.7	20.9	7.2	52.8
1939-40 ..	10.6	7.7	3.5	21.8	1967-68	25.1	19.8	6.9	51.8
1944-45 ..	9.2	9.2	3.0	21.4	1968-69	27.9	22.5	7.0	57.4
1949-50 ..	12.3	8.9	2.6	23.8	1969-70	31.0	23.7	7.9	62.6
1954-55 ..	13.7	11.9	3.4	29.0	1970-71 ^p	29.1	25.6	8.8	63.4

(a) Includes pork for manufacture into bacon and ham.

The next table, compiled on the same basis, analyses the items 'Beef and Veal' and 'Mutton and Lamb'.

Production of Meat
(⁰⁰⁰ Tons—Carcass Weight)

Year	Beef and Veal			Mutton and Lamb			Pigmeat (a)	Total Meat
	Beef	Veal	Total	Mutton	Lamb	Total		
1964-65 ..	25.4	0.9	26.3	9.1	9.0	18.1	6.6	51.0
1965-66 ..	22.1	0.9	23.0	11.5	9.6	21.1	7.0	51.1
1966-67 ..	23.7	1.0	24.7	11.2	9.7	20.9	7.2	52.8
1967-68 ..	24.1	1.0	25.1	11.5	8.4	19.8	6.9	51.8
1968-69 ..	27.1	0.8	27.9	11.5	10.9	22.5	7.0	57.4
1969-70 ..	r 30.4	0.6	r 31.0	12.6	11.1	23.7	r 7.9	r 62.6
1970-71 ^p ..	28.7	0.4	29.1	14.5	11.1	25.6	8.8	63.4

a) Includes pork for manufacture into bacon and ham.

Export of Meat

As early as 1890, other Australian States were exporting frozen (and later, chilled) lamb, mutton, beef and veal to overseas destinations but the development of a similar meat export trade from Tasmania has been of comparatively recent origin. The first major step was in the field of fat lamb production when the 1931-32 season resulted in approximately 19,000 carcasses being exported overseas; unfortunately the birth of this activity coincided with the economic depression of the 1930s and the attempt to introduce a new line in 'mixed' farming was at first discouraged by low prices. World War II saw a revival of demand with over 100,000 carcasses exported overseas in 1943-44, and after something of a decline in the early post-war period, exports climbed

to 161,815 carcasses in 1959-60. In recent years lamb exports have included greater proportions of processed cuts and therefore statistics of the number of lamb carcasses exported are no longer collected.

The other major development has been the growth of an export trade in beef and veal, the first shipments overseas commencing in 1954-55; also exports of mutton, mainly to Japan and U.S.A., increased substantially in 1965-66 and have been maintained at a high level since then. The following are meat export figures expressed in tons. Export weights cannot be directly compared with production weights since the former include boneless meat and meat which has had its fat content reduced, while the latter are in terms of carcass weight.

**Total Exports of Meat, 1969-70
(Tons)**

Destination	Beef and Veal	Lamb	Mutton	Pork	Offal (Edible)	Bacon and Ham
Interstate . . .	810	251	211	1,221	13	287
Overseas . . .	8,061	1,237	3,954	33	770	..
Total . . .	8,871	1,488	4,165	1,254	783	287

The importance of Tasmania's overseas meat trade can be judged from Australian Meat Board estimates of the percentage of Tasmanian production actually exported. The trend in recent years is shown in the following table:

**Proportion of Tasmanian Meat Production Exported Overseas (a)
(Source: Australian Meat Board)
(Per Cent)**

Type of Meat	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70
Beef & Veal	7.7	14.7	20.2	26.1	28.5	24.7	31.5	29.8	30.8	34.4
Mutton	3.2	10.9	17.3	27.8	19.8	39.5	44.1	44.7	48.2	47.3
Lamb	17.7	12.7	13.7	9.5	14.7	12.2	10.8	3.3	8.6	10.1

(a) The estimated percentages are derived by converting actual export weights to a carcass weight equivalent, thus giving a basis for comparison with production figures.

Meat Export Works

In 1969-70, there were eight licensed export slaughtering establishments in Tasmania. These were in Launceston (two), Hobart, Devonport, Longford, King Island, Smithton and Sorell.

In broad terms, it is true to say that Tasmania has changed from a meat importing to a meat exporting State and this development can be related to the changed pattern of farming, the most significant indicator being the increase in the area of sown pasture and in the number of livestock carried.

Bacon and Ham

In the tables on meat production, the product from pig slaughtering has been referred to as 'pigmeat'. Approximately eighteen per cent of pigmeat was converted in Tasmania to bacon and ham in 1969-70. Considerable

quantities of pigmeat are also exported to other States some of which are converted to bacon and ham. The next table shows the production of bacon and ham since 1939-40 in summary form:

**Production of Bacon and Ham
(Tons)**

Year	Bacon and Ham			Year	Bacon and Ham		
	Factory (a)	Farm	Total		Factory (a)	Farm	Total
1939-40	1,142	150	1,292	1964-65	1,158	13	1,171
1944-45	1,122	68	1,190	1966-67	1,242	n.a.	(b) 1,242
1949-50	948	43	991	1967-68	1,281	n.a.	1,281
1954-55	992	35	1,027	1968-69	1,394	n.a.	1,394
1959-60	1,120	24	1,144	1969-70 ^p	1,381	n.a.	1,381

(a) From 1959-60 includes small quantities made in establishments not classified as factories.

(b) Excludes farm production from 1966-67.

Dairy Products

In 1969-70, Tasmania's production of milk was 103,213,000 gallons which is one per cent above the previous record level of 1968-69. During the last four years milk used for cheese manufacture has increased significantly. There was relatively little change in milk used for butter manufacture between 1963-64 and 1967-68, but usage for this purpose in 1968-69 and 1969-70 was twelve to thirteen per cent more than in 1967-68. The following table summarises milk production since 1954-55:

Milk Production and Milk Utilisation: Summary

Year	Quantity of Milk Used for—			Total Milk Production	Dairy Cows at 31 March	Average Annual Production of Milk per Dairy Cow
	Factory Butter	Factory Cheese	Other Purposes (a)			
	'000 gal	'000 gal	'000 gal	'000 gal	no.	gal
1954-55 ..	38,737	548	12,736	52,021	111,781	485
1959-60 ..	54,597	735	14,894	70,226	126,183	554
1962-63 ..	60,877	1,440	16,201	78,518	141,255	570
1964-65 ..	64,621	5,265	17,457	87,343	(b) 143,257	(c) 589
1965-66 ..	65,092	6,592	16,206	87,890	148,452	578
1966-67 ..	66,520	8,411	16,636	91,567	149,148	591
1967-68 ..	64,046	10,408	16,339	90,793	152,179	581
1968-69 ..	72,546	12,837	16,781	102,164	152,894	647
1969-70 ..	74,067	11,921	17,225	103,213	155,040	650

(a) Milk used for 'Other Purposes' goes into the making of cream, ice cream, milk powder, concentrated milk, and other preserved milk products. It includes milk consumed as such. As from 1954-55, the milk equivalent of farm-made butter and cheese is also included.

(b) From 1963-64, the farm census recorded house cows (i.e. kept primarily for own milk supply) as a separate item excluded from the dairy cow population. It follows that figures for 1963-64 and subsequent years are not strictly comparable with those of previous years.

(c) Milk yielding population is taken as the mean of 'Dairy Cows—in Milk and Dry' and house cows, at 31 March in year of production and in preceding year. The figures should therefore be treated as an index rather than as an actual average quantity of milk produced per dairy cow.

Production of Butter and Cheese

The Australian dairying industry is capable of producing butter and cheese in quantities considerably greater than are required for domestic consumption but competition from other countries in overseas markets has resulted in low prices which tend to discourage exports. The solution to this problem has been in general terms to pool the returns from both domestic sales and overseas sales and to distribute from the pool to each individual factory, irrespective of whether its products are sold at home or abroad; in effect, a process of price equalisation operates, the higher domestic price being used to offset the lower overseas price. The administrative body implementing this scheme is the Commonwealth Dairy Produce Equalisation Committee Ltd.

The industry also receives subsidies from the Commonwealth Government under the provisions of the various Dairy Industry Assistance Acts, the first of which was passed in 1942. Under the fifth Five Year Plan, subsidies of \$27.0 million per annum are distributed by the Commonwealth Dairy Produce Equalisation Committee Ltd through factories to milk producers by payments on butter and cheese manufactured. It follows, then, that in the marketing of butter and cheese, two factors are in operation: (i) price equalisation directly affecting the return to factories; and (ii) subsidies directly affecting the return to producers of milk for butter and cheese.

In 1971-72 the Commonwealth Government guaranteed a subsidy of \$9.40 a cwt of butterfat produced for butter and cheese production. Export producers of processed milk products in 1971-72 will receive a maximum bounty of \$800,000 under the current plan which commenced on 1 July 1967.

Farmers in the past traditionally 'separated' their milk, producing a cream concentrate for delivery to the butter factory; the residue, skim milk, was used to feed pigs. Some factories now buy whole milk because they have diversified their output to include casein (a raw material for synthetic fibres, etc.) and dried skim milk.

Farm production of butter and cheese in the post World War II period has fallen to such low levels as not to warrant their collection or publication in more recent years.

It should be noted that the Commonwealth subsidy is applicable to factory butter and cheese but not to the same products manufactured on farms; the decline in farm production is probably related in part to this factor.

Although Tasmanian butter factories had been in operation before the turn of the century it was not till 1911 that annual factory production exceeded 1,000 tons and even by 1938-39 factory butter output was only approximately 4,000 tons.

The following table shows details of factory production of butter and cheese since 1961-62:

**Factory Production of Butter and Cheese
(Tons)**

Year	Butter (a)	Cheese	Year	Butter (a)	Cheese
1961-62	12,063	605	1966-67	14,311	3,763
1962-63	13,097	643	1967-68	13,778	4,646
1963-64	13,667	1,337	1968-69	15,764	5,728
1964-65	13,903	2,350	1969-70	16,085	5,322
1965-66	14,004	2,942	1970-71 ^p	15,032	5,463

(a) Includes butter equivalent of butter oil.

Disposal of Butter

Tasmania is a butter exporting State as shown in the following table:

**Butter (a): Production, Exports and Local Consumption
(Tons)**

Year	Production (Farm and Factory)	Net Exports (b)	Local Consump- tion (c)	Year	Production (Farm and Factory)	Net Exports (b)	Local Consump- tion (c)
1960-61	10,385	5,301	4,685	1965-66	(d)14,004	9,295	4,390
1961-62	12,181	7,457	4,467	1966-67	14,311	r 10,079	4,408
1962-63	13,193	8,642	4,521	1967-68	13,778	r 9,396	4,698
1963-64	13,763	8,227	4,885	1968-69	15,764	r 9,572	4,448
1964-65	<u>13,999</u>	10,231	4,527	1969-70	16,085	13,073	4,650

(a) Includes butter equivalent of butter oil.

(b) Net and gross are identical except in 1960-61 when 35 tons were imported. Includes Overseas and Interstate exports.

(c) Quantity of butter released for Tasmanian market (as supplied by the Commonwealth Dairy Produce Equalisation Committee Ltd) less the butter content of major commodities exported.

(d) Excludes farm production from 1965-66.

Consumption of Butter

Over the last ten years there has been a decline of about three pounds per capita in the annual Tasmanian consumption of butter. The decline may be partly attributed to the greater use of margarine. However, in 1969-70 the State's average butter consumption of 26.7 pounds per head of population was still well above the Australian per capita butter consumption of 20.5 pounds.

Bee-Farming

Bee-farming is a relatively small industry in Tasmania; the main Australian producing State being New South Wales. The next table, which summarises bee-keeping statistics over a period of ten years, is restricted to details from apiarists with five or more hives.

Bee-Farming

Year	Apiarists	Hives	Honey Produced		Beeswax Produced	
			Quantity	Average per Productive Hive	Quantity	Average per Productive Hive
1959-60	no.	no.	'000 lb	lb	'000 lb	lb
1959-60 ..	187	6,885	296	59.2	3.9	0.78
1963-64 ..	160	7,261	632	111.9	6.3	1.11
1964-65 ..	202	8,373	715	114.5	10.1	1.61
1965-66 ..	229	9,305	630	94.0	8.0	1.20
1966-67 ..	223	9,668	386	59.0	6.5	1.00
1967-68 ..	232	9,799	841	114.2	12.7	1.72
1968-69 ..	213	9,210	671	91.8	10.6	1.45
1969-70 ..	220	10,209	821	103.4	12.6	1.58

Of the 220 apiarists with five or more hives in 1969-70, 23 with 100 or more hives contributed 82.6 per cent of the total honey produced.

A proportion of the larger commercial apiarists can be described as 'migratory' in the sense that they seasonally move their hives into the leatherwood areas of the West Coast. Leatherwood, *Eucryphia lucida*, from which a

distinctively flavoured honey is produced, has a large white flower and the species is unique to Tasmania. The quantity of leatherwood honey produced varies considerably from year to year depending upon the amount of blossom and weather conditions. In 1969-70, it accounted for 43 per cent of total honey production compared with only 21 per cent in 1966-67. Some hives are also moved into orchard and small fruit areas at blossom time. The sources of honey for the Tasmanian market and estimated honey consumption per head of population are shown in the following table:

Honey Consumption

Average for Three Years Ended—	Production	Imports	Exports	Balance Available For Local Con- sumption (a)	Estimated Per Capita Consumption
	'000 lb	'000 lb	'000 lb	'000 lb	lb
1959-60	373	235	52	556	1.64
1969-70	778	161	472	467	1.21

(a) Production *plus* imports *less* exports.

Poultry Farming

Introduction

Until recent years, little statistical information has been available on the poultry industry in Tasmania, principally due to difficulties of collection and adequate coverage, but changes in legislation and other factors have now made it possible to compile more detailed data.

Poultry Numbers and Egg Production

Household Production: Many householders have small flocks of up to 20 birds (i.e. below the legal minimum involving registration and payment of fees) and surveys suggest that these 'back-yard' flocks may produce up to 50 per cent of all eggs. However, no accurate statistics are available for this component and it is excluded from the tables that follow.

Commercial Producers: Producers with small flocks over the legal minimum size (more than 20 birds) may nevertheless keep them mainly for their own use rather than to sell the eggs and accordingly it was also decided to exclude from the statistics, producers with less than 100 birds (of all types); the Bureau's 1966-67 census of the poultry industry established that producers in this excluded category numbered 213 but owned only three per cent of the total number of hens and laying pullets in commercial flocks in Tasmania.

In the poultry industry, as in many other primary industries, there has been a trend to fewer but larger establishments in recent years. In 1967 there were 196 poultry farms with a total of 189,600 hens and laying pullets; by 1970 the number of farms had decreased to 133 with 174,000 hens and laying pullets. A size classification of the 133 farms in 1970 shows that thirteen farms (only ten per cent of farm numbers) possessed 46 per cent of the laying stock. Fifty-four per cent of the poultry farms each had less than 500 laying birds.

The following table shows the number of poultry on the 133 poultry farms which reported a total of 100 or more birds of all types at 30 June 1970; also the eggs produced from hens and pullets during 1969-70.

Poultry Numbers and Egg Production, 1969-70
Commercial Producers Only (a)

Statistical Division	Poultry Farms (a)	Poultry Numbers at 30 June 1970			Eggs Produced 1969-70 (b)
		Hens and Laying Pullets	Other Fowls	Ducks and Drakes, Turkeys and Geese	
	no.	'000	'000	'000	'000 doz
Hobart	37	43.4	6.7	0.1	747.7
South Eastern	14	22.9	19.5	..	342.2
Southern	19	22.5	148.5	10.9	359.9
North Central	5	5.2	..	..	55.5
North Western	21	29.7	3.9	..	528.9
North Eastern	19	26.5	14.2	..	512.2
North Midland	14	10.1	6.3	0.1	199.3
Midland	4	13.2	1.0	..	195.0
Western .. .. .	..	..	..	..	..
Total	133	173.5	200.1	11.2	2,940.6

(a) Includes only producers with a total of 100 or more birds of all kinds.

(b) Hen and pullet eggs only. Includes 46,044 dozen eggs produced by commercial poultry farms which ceased production before 30 June 1970.

Poultry Slaughtering

Poultry slaughtering statistics were first collected in 1960-61 from all known establishments slaughtering 100 or more birds (of all types) annually; up to 1964-65, only numbers slaughtered were sought but from 1965-66 data were expanded to include both live and dressed weight. The next table shows the information available for a three-year period:

Number and Weight of Poultry Slaughtered (a)

Year	Poultry Slaughtered				
	Number	Live Weight		Dressed Weight (b)	
		Total	Average per Bird	Total	Average per Bird
	'000	'000 lb	lb	'000 lb	lb
CHICKENS (c)					
1967-68	861	3,057	3.6	2,264	2.6
1968-69	1,001	3,881	3.9	2,866	2.9
1969-70	978	3,476	3.6	2,566	2.6
OTHER FOWLS (d)					
1967-68	148	743	5.0	525	3.5
1968-69	131	638	4.9	447	3.4
1969-70	115	503	4.4	363	3.2
DUCKS AND DRAKES, TURKEYS, GEESE					
1967-68	49	333	6.8	241	4.9
1968-69	37	255	6.8	196	5.3
1969-70	35	265	7.5	205	5.8

(a) Includes only establishments slaughtering 100 or more birds of all kinds.

(b) Includes weight of whole birds, pieces and giblets.

(c) Including broilers, fryers and roasters.

(d) Hens, roosters, etc.

Size Structure of Slaughtering Industry

The following table classifies slaughtering establishments according to the number of birds slaughtered:

Number of Poultry Slaughtered According to Size of Establishment, 1969-70

Size of Establishment (Number of Birds Slaughtered) (a)	Number of Establishments	Number of Birds Slaughtered			Total Birds Slaughtered	
		Chickens (b)	Other Fowls (c)	Ducks and Drakes, Turkeys and Geese	Number	Proportion of Total
		'000	'000	'000	'000	per cent
100- 500 ..	20	2	3	..	5	0.4
501- 1,000 ..	11	3	5	1	9	0.8
1,001- 1,500 ..	4	3	2	1	5	0.5
1,501- 2,000 ..	..	..	..	..	..	..
2,001- 3,000 ..	2	5	..	..	5	0.5
3,001- 5,000 ..	2	6	2	..	8	0.7
5,001-10,000 ..	1	..	..	8	8	0.7
10,001-20,000 ..	2	11	20	..	30	2.7
Over 20,000 ..	6	948	83	25	1,057	93.7
Total ..	48	978	115	35	1,128	100.0

(a) Classified according to number of birds of *all kinds* slaughtered.

(b) Including broilers, fryers and roasters.

(c) Hens, roosters, etc.

The trend in poultry slaughtering in recent years has been towards larger establishments. In 1965-66 there were 95 establishments slaughtering 100 or more birds (of all types). Nine establishments killing more than 5,000 birds each a year slaughtered a total of 606,000 birds. By 1969-70, however, there were only 48 establishments killing 100 or more birds, nine of which slaughtered over 5,000 birds each, or a total of 1,096,000 birds. The dressed carcass weight of birds slaughtered in the final group of establishments in the previous table (over 20,000) was 2,926,000 lb; for all establishments in the table, the total was 3,133,000 lb. In 1965-66 the over 20,000 birds size-group accounted for 83.3 per cent of the number of birds slaughtered and in 1969-70, 93.7 per cent.

A principal factor in creating a larger poultry slaughtering industry has been the marketing of quick-frozen birds through supermarkets, delicatessens, grocers, etc. Before freezing cabinets were in general use, poultry was mainly sold by butchers; refrigeration techniques have had the effect of multiplying the sales outlets. Large-scale production has also cut unit costs.

Chicken Hatching

In 1964-65, the first census of commercial chicken hatcheries (i.e. those establishments hatching chickens for sale) was undertaken. As from 1965-66, the census was extended to all hatcheries which set 1,000 or more eggs during the year, including hatcheries producing chickens for their own use and not for sale. In 1965-66, 1,108,000 chickens were hatched, 62.2 per cent for meat production and 33.6 per cent for egg production (the balance being for breeding purposes). Of the 1,421,000 chickens hatched in 1967-68, 69.4 per cent were for meat production and 26.1 per cent for egg production.

Because of the limited number of hatcheries operating in 1969-70, most of the statistical information for that year is confidential and therefore cannot be published.

RURAL POPULATION AND EMPLOYMENT**Employment on Rural Holdings**

The following table gives details of males working on rural holdings as reported in the annual farm census at 31 March:

Male Farm Workers at 31 March

Particulars	1960	1966	1967	1968	1969	1970
Number of Rural Holdings (One Acre and Over)	11,202	10,777	10,641	10,631	10,384	10,159
Permanent Full-time Workers—						
Owners, Lessees or Share Farmers	7,888	7,450	7,564	7,158	6,915	6,760
Relatives of Owners, etc. (Over Fourteen Years) not Receiving Wages	197	6	5			
Employees (a)	4,457	4,073	4,101	4,051	3,842	3,485
Total	12,542	11,529	11,670	11,209	10,757	10,245
Temporary Workers on Wages or Contract	5,196	5,715	4,773	4,621	4,831	4,609

(a) Includes managers and relatives receiving wages or salaries.

Female Workers on Rural Holdings

Similar details of female employment are not available due to a definitional difficulty in establishing in what degree a woman performing ordinary domestic duties on a rural holding performs other rural tasks that justify her classification as a *permanent full-time rural worker*, in the same sense that the term is applied to a male.

Permanent Residents on Rural Holdings

Persons of all ages residing permanently on rural holdings (as defined for statistical purposes) numbered 21,368 males, 19,313 females, or a total of 40,681 persons at 31 March 1970. The total number in 1969 was 43,311 and in 1968, 44,630.

When those of school and lower ages and women engaged in domestic duties, etc. have been excluded, the remaining rural population is not necessarily engaged full-time in farming. Some who are included in farm population devote much of their time to non-farming activities such as working in commercial or industrial enterprises, commercial fishing, sawmilling, etc. (which is only to be expected since a rural holding may be as small as one acre).

TECHNICAL ASPECTS OF RURAL INDUSTRY**Artificial Breeding***Introduction*

Artificial breeding is a technique applicable to animals, birds and bees, whereby a female is inseminated artificially with semen collected from a male. In Tasmania, its main application has been in cattle although it is used to a lesser extent for pigs.

Use of artificial breeding allows more effective use of superior bulls; in addition, infertility diseases such as *vibriosis*, *brucellosis* and *trichomoniasis*, all of which are transmitted by bulls, can be more effectively controlled.

In Tasmania most artificial breeding activities are undertaken by the Artificial Breeding Board which operates a Semen Production Centre at Hadspen Park and eight artificial insemination centres, although some activities are carried out from private centres.

Semen Imports

Semen can be imported into Tasmania from all Australian States, New Zealand and the United Kingdom. Small quantities are regularly imported from all these sources but since the lifting of export restrictions in the United Kingdom in 1968 the bulk of importations have been made from this country. The main interest has been in Charolais, a French beef breed, but smaller quantities of semen from other beef and dairy breeds have also been imported.

Semen Exports

Semen produced at Hadspen Park is exported to all Australian States and several other countries. Early in 1971 substantial shipments were despatched to Ceylon, Malaysia, and New Zealand, and in July of 1971 the first shipment of Tasmanian semen was despatched to Canada. In early December 1971, the Board contracted to supply 30,000 semen doses over a two-year period, to Canadian and U.S. customers. Total value of the contract is \$100,000. Because of Tasmania's unique situation of being free from cattle disease, it appears export markets could develop dramatically in the near future.

Artificial Breeding Statistics

The following table gives details of Artificial Breeding Board activities in recent years:

Artificial Breeding: Services and Inseminations
(Source: Artificial Breeding Board)

Year	Cows Served			Total Insemina- tions	Non-return Rate for Commercial Service (b) (Per Cent)
	Commercial Service	Infertility Service (a)	Total Cows		
1961-62	10,008	9,527	19,535	30,674	61.5
1962-63	10,879	11,422	22,301	34,077	64.7
1963-64	14,427	9,765	24,192	38,029	61.2
1964-65	17,430	6,454	23,884	36,847	62.5
1965-66	27,152	2,010	29,162	46,106	61.4
1966-67	29,034	2,298	31,332	47,148	66.1
1967-68	41,892	197	42,089	60,587	68.3
1968-69	(c) 43,658		43,658	62,551	69.3
1969-70	49,818		49,818	70,350	70.2
1970-71	48,588		48,588	68,917	69.7

(a) Includes cows inseminated in Department of Agriculture's research programme.

(b) Percentage of cows not returning for further service within 90-120 days following first service.

(c) Separate figures not available after 1967-68; infertility service numbers are negligible.

Freeze Branding

In 1969 the Board introduced a freeze branding service. Freeze branding involves immersing a copper brand in dry ice and alcohol or liquid nitrogen, reducing its temperature to -79°C . The brand is then applied to the beast's hide and results in the hair follicle being killed; consequently the hair turns white. In the case of light coloured cows the brand is held on the hide longer, resulting in complete removal of the hair. This is a painless procedure and results in a clear brand which can be read without difficulty at a considerable

distance and is of great assistance to breeders in identifying cows for mating programmes. Up to 30 June 1971, 27,108 cows had been freeze branded by Board staff in Tasmania.

Performance Testing

Introduction

The Department of Agriculture has introduced performance testing schemes in most areas of livestock production in Tasmania. Tests are conducted for beef and dairy cattle, sheep and poultry and a pilot scheme for pigs is currently operating.

For all livestock, performance testing involves isolating improvable genetic factors that are easily inherited and of economic importance, such as milk production or growth rates. Results from the schemes provide farmers with an objective and standard basis for assessing existing livestock management programmes and future requirements. Instead of relying on appearance, physical type or pedigree for stock selection the schemes provide evidence of genetic suitability.

Beef Cattle

Routine performance testing of beef cattle first started in Tasmania in 1963 and by 1970-71, 45 herds were participating in the scheme which is designed to indicate cows and bulls whose progeny are capable of fast weight-gain rates.

The scheme involves identifying the cow, the bull with which it was mated and the resulting progeny. At birth, the calf's sex and date of birth (and sometimes but not necessarily, birth weight) are recorded. The calf is weighed at various ages and the rate of weight-gain calculated.

Comparison of the test results provides a basis for selection of calves for breeding purposes. Sires and dams can be evaluated from the results given by their progeny.

Dairy Cattle

Two schemes of dairy cattle performance testing operate in Tasmania. These are: (i) the Australian Official Pure Bred Dairy Cattle Production Recording Scheme; and (ii) the Grade Herd Recording Scheme. Both schemes involve systematic recording of each cow's monthly milk and butterfat yield.

Data from the pure bred cattle scheme is published annually as a guide to stud cattle buyers. Information from both schemes is provided to participating farmers for evaluation of stock management programmes.

Sire Surveys: These surveys are undertaken to assess the genetic purity of bulls for production factors, enabling the farmer to select sires on their genetic make-up rather than on appearance or pedigree. The bull's ability as a sire is assessed by comparing the performance test results (milk and butterfat yields) of a number of its progeny, usually at least five, against the results of contemporaries in the herd.

Sheep

A fleece measurement service, confined mainly to rams in stud flocks, was started in Tasmania in 1959.

At shearing, fleece samples are taken for laboratory measuring and the total fleece weight is recorded. From this information the sheep producing heavy fleeces with good commercial fleece measurements can be identified.

Pigs

The two factors assessed in the pilot pig performance testing scheme, growth rate and fat cover, are both easily inherited traits and of high economic

importance. Other factors such as litter size and milk production are also economically important but are not easily inherited and are therefore not assessed.

Testing starts when the pigs reach 70 lb liveweight. The date of attaining this weight is recorded and the pigs are weighed again at about 180 lb liveweight. From this information daily liveweight gains can be calculated. Ultrasonic readings are taken of the animal's back fat and these readings together with the daily liveweight gain are used to make an index for each animal. Comparisons of the indexes enable selection of pigs with the most desirable traits.

Poultry

A centre for random sample testing was established at Cressy in 1959. Tests conducted at the centre extend over 66 weeks comprising a 17-week rearing period and a 49-week laying stage.

Participating large-scale commercial breeders and hatcherymen provide random samples of eggs which are hatched at Cressy and then reared together with a control flock.

Over the period of the test, egg production, mortality and feed consumption are recorded and eggs are quality tested. The information is used to calculate various factors including production per bird, amount and cost of feed consumed per dozen eggs produced and average egg weight.

The Cressy centre provides facilities for evaluation of nine commercial flock entrants in each test.

Farm Machinery on Rural Holdings

A previous table showing male farm workers over a ten-year period indicated a steady fall in the rural labour force. This decline must be associated, in some degree, with the increasing use of machinery on farms. The following table gives details of machinery on rural holdings at 31 March:

Machinery on Rural Holdings at 31 March

Type of Machinery	1960	1966	1967	1968	1969	1970
Cultivating Equipment—						
Rotary Hoes and Rotary Tillers—						
Self Contained Power Unit						
Type	(a) 1,088	1,199	1,221	1,284	1,292	1,240
Tractor Mounted or Trailing						
Type	(b) 548	626	723	927	962	878
Harvesting Equipment—						
Headers, Strippers and Other						
Harvesters	662	703	655	726	711	628
Mowers, Agricultural—						
Reciprocating (Cutter Bar)						
Type—						
Power Drive	3,866	5,132	5,193	5,134	5,139	5,029
Ground Drive	1,887	994	823	664	617	564
Rotary Types (incl. Slashers,						
etc.)	n.a.	n.a.	n.a.	1,197	1,392	1,588
Hay Rakes—						
Side Delivery	1,709	2,386	2,438	2,543	2,609	2,604
Buck	948	1,022	988	983	954	926
Dump	1,389	971	861	848	796	763
Forage Harvesters	122	269	309	317	329	348
Pick-up Balers	1,100	1,661	1,757	1,903	1,957	2,003
Potato Diggers	1,095	950	932	958	923	893
Potato Harvesters	n.a.	n.a.	n.a.	n.a.	70	77

Machinery on Rural Holdings at 31 March—continued

Type of Machinery	1960	1966	1967	1968	1969	1970
Seeding and Planting Equipment—						
Grain Drills (All Types) ..	3,840	4,036	4,011	3,944	3,925	3,861
Fertiliser Distributors & Broadcasters—						
Rotary	3,060	3,841	3,909	4,149	4,177	4,217
Direct Drop	1,851	1,925	1,896	1,911	1,799	1,763
Potato Planters	196	239	250	270	281	295
Other Equipment—						
Shearing Machines (Number of Stands)	3,899	4,652	4,559	4,824	4,862	4,839
Milking Machines (Number of Stands)	11,051	15,894	16,414	16,968	17,057	16,941
Hammer Mills	227	512	570	635	644	680
Spray Plants—Power Driven ..	2,116	3,065	2,906	2,996	2,958	2,918
Irrigation Plants—Power Driven	937	2,034	2,148	2,473	2,479	2,495

(a) Rotary hoes only.

(b) Tractor mounted type only.

Every three years details are obtained from all farmers regarding characteristics of grain and seed harvesters used. A summary of this information is given in the next table (1970 being the most recent year for the detailed collection):

Grain and Seed Harvesters on Rural Holdings, 1970 (a)

Age in Years	Self Propelled			Tractor or Horse Drawn				All Har-vesters	
	Width of Cut (Feet)								
	Up to 12	Over 12 Up to 18	Over 18	Up to 8	Over 8 Up to 10	Over 10 Up to 12	Over 12		
OPEN FRONT									
0-4	35	4	2	15	2	..	..	58
5-9	17	3	..	41	6	..	..	67
10-14	12	..	..	95	5	..	..	112
Over 14	8	..	..	141	4	1	..	154
COMB FRONT									
0-4	4	..	..	4	2	3	..	13
5-9	13	..	..	13	5	3	1	35
10-14 .. ..	..	..	..	33	3	2	..	38
Over 14	1	..	..	125	20	5	..	151
TOTAL									
0-4	39	4	2	19	4	3	..	71	
5-9	30	3	..	54	11	3	1	102	
10-14	12	..	..	128	8	2	..	150
Over 14	9	..	..	266	24	6	..	305
Total	90	7	2	467	47	14	1	628	

(a) At 31 March.

The next table deals with tractors and gives a ten-year comparison:

Number of Tractors on Rural Holdings at 31 March

Type of Tractor	1960	1966	1967	1968	1969	1970
Wheeled	8,395	10,856	11,042	11,478	r 11,640	11,764
Crawler	997	1,091	1,129	1,186	r 1,110	1,192
Total ..	9,392	11,947	12,171	12,664	12,750	12,956

Artificial Fertilisers

Until 1967-68 there was a trend to greater use of artificial fertilisers, not only in total, but also in the average application per acre, and this is illustrated in the next table. The need to reduce costs because of falling prices for some farm products, coupled with research results indicating that high quantities were not needed to maintain pasture growth resulted in reduced quantities of artificial fertilisers being used in 1968-69 and 1969-70 despite increases in the area of crops and improved pastures.

The following table shows the amount of artificial fertiliser used by the type of crop for recent years.

Artificial Fertilisers Used

Particulars	Unit	1959-60	1966-67	1967-68	1968-69	1969-70
Vegetables (a)—						
Area Fertilised	'000 acres	50	29	28	29	27
Fertiliser Used—Total ..	'000 cwt	168	180	190	184	174
Per Acre	cwt	3.38	6.28	6.75	6.43	6.40
Fruit—						
Area Fertilised	'000 acres	20	21	20	20	19
Fertiliser Used—Total ..	'000 cwt	119	147	147	141	146
Per Acre	cwt	6.09	7.02	7.37	7.14	7.58
Pastures—						
Area Fertilised	'000 acres	1,029	1,588	1,561	1,481	1,473
Fertiliser Used—Total ..	'000 cwt	1,639	2,687	2,700	2,470	2,404
Per Acre	cwt	1.59	1.69	1.73	1.67	1.63
Other Crops—						
Area Fertilised	'000 acres	98	182	196	204	174
Fertiliser Used—Total ..	'000 cwt	194	380	409	414	349
Per Acre	cwt	1.98	2.09	2.09	2.03	2.00
Total Usage—						
Area Fertilised	'000 acres	1,196	1,819	1,085	1,733	1,693
Fertiliser Used	'000 cwt	2,119	3,395	3,444	3,209	3,073

(a) Vegetables for human consumption only (except for 1959-60 data).

Types of Artificial Fertiliser

The basic types of artificial fertiliser employed are phosphatic (e.g. superphosphate), nitrogenous (e.g. sulphate of ammonia) and potassic (e.g. muriate of potash), their essential chemical contribution to plant nutrition being phosphoric oxide (P_2O_5), nitrogen (N) and potash (K_2O). Superphosphate, either 'straight' or with additives, is most widely used in Tasmania, the additives consisting of trace elements such as cobalt, molybdenum, copper, boron, zinc, etc. In addition to the basic fertiliser types, various combinations are also used. Due to the numerous fertiliser combinations on the market it has not been possible to obtain any detailed analysis of the types applied to various purposes.

Area of Land Irrigated

Comparison

Both N.S.W. and Victoria have over one million acres of irrigated land. By way of contrast, the Tasmanian total was only 45,784 acres in 1970-71. Owing to the generally more reliable rainfall in Tasmania, scarcity of water is not such a problem as it is in the other Australian States, although quite a number of streams are not permanently flowing and drought conditions in some areas of Tasmania are not unknown.

Farm Storages

Until a few years ago, Tasmanian irrigated areas were negligible except for long-established hop fields. The increasing use of spray irrigation on orchards, pastures, potato and other vegetable crops resulted in the total area irrigated rising to a peak of 66,243 acres in 1967-68. However, figures for the three subsequent years indicate a general decline in the recent use of irrigation, with only 45,784 acres being recorded for 1969-70. This trend could be a reflection of difficult economic conditions being experienced in the rural sector. Until recently, there was an almost complete dependence on natural stream flows but the need for some regulating storages has become apparent. Farmers have been constructing storages for their own use and the extension of this practice is seen as the logical solution in most areas because there are not many locations from which single large reservoirs can economically serve areas of suitable land.

Water Resources

It is true that the State has very large volumes of water stored in the central lakes and behind the dams of the State Hydro-Electric Commission but no large irrigation scheme based on power-house discharge has yet been undertaken. Unlike the Snowy River scheme, Tasmanian hydro-electric construction has production of power as the primary goal although the resulting storages of water at high level could obviously be the logical starting point for extensive irrigation schemes if the decision were taken to develop them.

The Derwent affords an example of the benefits of hydro-electric power development in regulating the flow of a river. Prior to the installation of the Waddamana Power Station in 1916, when the river was completely unregulated, the summer minimum flow was known to have fallen as low as 200 cusecs, and it is estimated that the lowest ever was possibly 120 cusecs. Today, regulated by the highland storages, the minimum summer flow in normal operating conditions is about 1,400 cusecs and the average summer flow is considerably above this figure. In actual fact, the long term average flow at present being maintained in the River Derwent at its lower levels is about 4,500 cusecs (i.e. 2,250 million gallons per day or approximately nine times the average amount consumed daily from the water supply system serving Sydney and Wollongong). A flow of 4,500 cusecs, assuming no evaporation, would fill Australia's largest storage—the Eucumbene—in just over a year. The Derwent is an obvious example of a river from which large quantities of water can now be obtained without the creation of storages and similar opportunities exist on the South Esk, Huon, Lake, Mersey and Forth Rivers. The State's biggest rivers, the Gordon and Pieman, flow out to the West Coast and no diversion to the eastern half of the watersheds has been planned.

During 1970, the Rivers and Water Supply Commission commenced work on the Cressy-Longford Irrigation Scheme. Water from the tailrace of the Hydro-Electric Commission's Poatina works will be utilised to irrigate about 7,000 acres of land within an area of 20,000 acres proclaimed by the Governor as an irrigation district in May 1970. Water will be available to 62 farms within

the district as well as to properties near the Liffey River between Poatina and the Irrigation District. The Commonwealth Government has offered \$750,000 towards the cost of the scheme which will involve the construction of some sixty miles of channels.

Area Irrigated

A total of 1,522 farms reported the use of irrigation in 1970-71 compared with 1,988 in the previous year. Details of the area of crops and pastures irrigated in Tasmania are shown in the following table:

**Area of Crops and Pasture Irrigated
(Acres)**

Year	Crop					Pasture	Total
	Hops	Green Feed	Fruit	Potatoes	Other		
1961-62	1,447	1,589	3,930	1,374	3,136	11,713	23,189
1962-63	1,465	2,043	4,446	1,688	3,208	11,435	24,285
1963-64	1,463	2,703	5,933	1,984	5,794	15,693	33,570
1964-65	1,553	2,583	5,955	2,246	7,791	14,194	34,322
1965-66	1,524	3,948	7,241	4,216	10,616	17,651	45,196
1966-67	1,495	5,433	8,287	4,100	9,799	18,111	47,225
1967-68	1,587	6,273	9,042	5,887	14,275	29,182	66,243
1968-69	1,550	3,784	8,157	6,316	13,283	23,167	56,252
1969-70	1,440	5,103	7,663	5,418	14,878	25,429	59,929
1970-71	1,246	3,543	4,977	4,771	8,657	22,590	45,784

Irrigation Methods and Sources of Water

In 1967-68, for the first time, statistics of irrigation methods and source of water used for irrigation were collected. The main method of irrigation is by 'spray' which accounted for 72 per cent of the total area irrigated in 1970-71. The following table gives details of the methods of irrigation used:

**Method of Irrigation, 1970-71
(Acres)**

Crop or Pasture Irrigated	Method				Total
	Spray	Channel or Furrow	Flooding	Multiple Methods	
Crops—					
Potatoes ..	4,754	16	..	2	4,772
Other Vegetables ..	6,182	8	56	47	6,293
Fruit	4,290	107	248	332	4,977
Green Feed	2,751	56	657	80	3,543
Hops	480	619	140	8	1,247
Other	2,247	30	65	23	2,365
Pasture	12,197	1,482	7,478	1,433	22,590
Total	32,900	2,317	8,644	1,923	45,784

The next table highlights the importance of irrigation in the potato growing industry:

Potatoes Irrigated

Particulars	1960-61	1968-69	1969-70	1970-71
Total Area of Potatoes Planted .. acres	11,129	11,461	9,367	8,994
Area Irrigated—				
Total acres	1,374	6,316	5,418	4,771
As Proportion of Area Planted .. per cent	12.3	55.1	57.8	53.0

The next table shows areas irrigated from each source of water:

Source of Water for Irrigation, 1970-71

Source of Water	Area Irrigated (Acres)		Number of Holdings Reporting Each Source of Water	
	1969-70	1970-71	1969-70	1970-71
Surface Water from—				
Communal Irrigation Schemes	1,526	1,524	14	11
Rivers, Creeks, etc.	27,475	21,093	763	555
Farm Dams, etc.	30,185	22,414	1,244	942
Underground Water Supply (Bore, Well, etc.)	238	341	32	27
Municipal Water Supply	506	413	96	81
Total	59,929	45,784	(a) 1,988	(a) 1,522

(a) This is the total number of holdings reporting the use of irrigation and not the total number of holdings reporting each source of water since one holding may report a number of different sources.

TASMANIAN DEPARTMENT OF AGRICULTURE

Aims and Structure

The Department of Agriculture (originally the Agricultural Bureau of Tasmania) was created in the late 1880s with very narrow aims, principally to administer plant and animal regulations and advise the Government on all phases of agriculture. In 1927, however, the State Government decided to reorganise the Department, a new aim having been suggested by the Commonwealth Development and Migration Commission which most strongly urged the spread of scientific knowledge among primary producers.

The functions of the modern Department are: (i) active research and investigation into agricultural problems; (ii) wide dissemination of technical information and other advice to farmers; and (iii) regulatory and administrative action as required under various State Acts.

To carry out the functions associated with agriculture, the Department, headed by the Director, is divided into five *divisions* (agronomy, horticultural, dairy, plant pathology and entomology), three *services* (extension, animal health and administrative) and four *sections* (wool, piggery, poultry and economics). The Department has its own laboratories, research stations and experimental farms. In addition, the Director administers the Sea Fisheries Division.

Research and Investigations

Introduction

The fundamental work, undertaken in the State's research farms and laboratories, is aimed at increased productivity through improvements in plant and animal performance.

At present, there are three research centres and one laboratory associated with agronomical research, two research centres and a laboratory involved in horticultural research, one bacteriological laboratory devoted to dairy research and bacterial investigations, and laboratories which deal with entomological and plant pathological investigations. Livestock studies are conducted on two of the centres associated with agronomical research and laboratory facilities are provided at Mt Pleasant (Launceston).

The following summarises the principal work of each centre:

Cressy Research Farm

Research into, and production of, foundation seed for cereals, pulse crops and pasture species; livestock research relating to poultry, sheep and pigs.

The cereals dealt with include wheat, oats and barley while the main pasture species included in current research and production programmes are ryegrasses, cocksfoot, phalaris, white clover, subterranean clover and lucerne.

Work on poultry is associated mainly with random sample testing and techniques for egg evaluation. Sheep studies include the evaluation of grazing management and nutrition trials while pig research is concerned mainly with nutrition trials using a variety of foods and supplements.

Elliott Research Farm

Research and investigation into crops and pasture species and prime lamb production.

The main crop research is on potatoes and current trials include investigations into the effects of fertilisers, plant spacing, trickle irrigation, herbicides and 'time of planting'. In addition, weed control in kale and lucerne crops is under investigation and foundation barley seed is grown.

Investigational trials for pasture are concerned with fertiliser application, seeding rates, ryegrass and lucerne varieties, clover seed inoculation and irrigation on subterranean clover.

The research on sheep involves lifetime studies, cross-bred performance and continuous grazing trials.

Tewkesbury Potato Station

The station functions mainly to supply foundation seed of major potato varieties for multiplication through the seed certification scheme. Current research includes studies related to screening of varieties and hybrid selections, multiplication of promising seed and time of planting in relation to seed production.

Huon Horticultural Research Station

Current research projects include the study of apple tree diseases and insect pests, rootstock trials, pruning methods, tree spacing, budwood selection propagation and bulk handling of fruit crops.

Forthside Vegetable Research Farm

The main studies currently being undertaken are concerned with crop nutrition and cultural factors including plant spacing and times of sowing and harvesting. New vegetable varieties are investigated and tested.

Crops under investigation include green peas, green beans, onions, carrots, beetroot, cauliflower and oil poppies.

Laboratories

The Department's main laboratory facilities are provided at the Launceston Dairy Laboratory, the Mt Pleasant Veterinary Laboratory and the New Town Research Laboratories.

Chapter 7

PRIMARY INDUSTRY—NON-RURAL

FORESTRY

Introduction

When the first explorers ventured beyond the main coastal areas of continental Australia, they encountered arid zones and desert, nearly devoid of timber. By contrast, in Tasmania dense and continuous forest was the main barrier to early penetration, although the early settlements were sited in open savanna-like country which originated from firing by the Tasmanian natives. No Australian State has similar widespread conditions favourable for forest growth: a cool temperate climate; and assured annual rainfall varying from 20 to 150 inches, according to locality, and showing relatively small seasonal variation.

In the 170 years since the first settlement, land clearing, timber exploitation and fires have left their mark; the Forestry Commission estimated the total forest area at 30 June 1970 as 7,797,000 acres (i.e. about 46 per cent of the State's total area). By Australian standards, however, a State with 46 per cent of its area under forest is uniquely endowed.

Trees of the Tasmanian Forests

Forest Types

There are two basic types of forest in Tasmania: rain forest and sclerophyll forest, and their respective occurrence may be correlated with intensity of rainfall. The rain forest is principally located in the western half and also in the north-east highlands, the sclerophyll forest predominating elsewhere. In Tasmania the sclerophyll forest can be regarded as eucalypt forest, because of the dominance of eucalypts. The temperate rain forest is characterised by the dominance of *Nothofagus cunninghamii* (myrtle), *Eucryphia lucida* (leatherwood), *Atherosperma moschatum* (sassafras), *Acacia melanoxylon* (blackwood) and other trees which appear with changed soil conditions. The exclusive appearance of myrtle types or of eucalypts is determined by rainfall factors. In areas with annual falls above 60 inches, the myrtle appears to exclude the eucalypts, while in areas averaging 45 to 60 inches myrtle is found as understorey cover to eucalypt growth. Since the eucalypts are the most important Tasmanian source of timber, in general it can be said that the better quality forests grow in regions between the 30-inch and 60-inch isohyets. The most valuable eucalypts in such forests belong to the ash group and include *E. delegatensis* (alpine ash), *E. obliqua* (stringy bark), and *E. regnans* (mountain ash). In areas with falls of less than 30 inches, the forests have *E. globulus* (blue gum), *E. linearis* and *E. pauciflora* (peppermint), *E. ovata* (swamp gum), *E. viminalis* (white gum) and also *E. obliqua* (stringybark).

Hardwoods and Softwoods

Tasmanian forests are almost exclusively cut for hardwood, the slow growing indigenous softwoods having been exploited in the past without effective regeneration; they were never very plentiful. The principal species are *Athrotaxis selaginoides* (King Billy pine), *Dacrydium franklinii* (Huon pine) and *Phyllocladus aspleniifolius* (Celery-top pine). The scarcity of indigenous softwoods is being met, in part, by the creation of exotic plantations, the principal tree grown being *Pinus radiata*, but at 30 June 1970 the softwood plantations (56,600 acres) accounted for only 0.7 per cent of the State's total forested area. The following table shows the area of softwood and hardwood plantations established by the Forestry Commission (but excludes privately-owned areas):

Area of Plantations at 30 June

(Acres)

District	1969			1970		
	Soft-woods	Hard-woods	Total	Soft-woods	Hard-woods	Total
Smithton .. ..	..	23	23	..	23	23
Burnie	4,981	..	4,981	5,317	..	5,317
Devonport	5,210	911	6,121	6,164	911	7,075
Launceston	1,196	..	1,196	1,255	..	1,255
Scottsdale	13,099	..	13,099	13,968	..	13,968
Fingal	11,241	..	11,241	13,377	..	13,377
Dover	152	..	152	210	..	210
Queenstown .. ..	..	..	..	221	..	221
Total	35,879	934	36,813	40,512	934	41,446

The Forestry Commission intends to plant 4,700 acres of softwoods during 1971-72. The distribution of plantings by districts is (in acres): Fingal, 1,900; Devonport, 900; Scottsdale, 850; Strahan, 600; Burnie, 300; and Launceston, 150.

Demand for Forestry Products

Timber was always in demand as a fuel and as a building and construction material from the days of the original settlement. The possibility of using eucalypts for paper manufacture was investigated in the nineteenth century by Sir Ferdinand von Mueller, the celebrated botanist, and he concluded that eucalypts provided a bark which was suitable for the manufacture of paper. In actual fact, when paper-making was begun at Burnie in 1939 the process involved discarding the bark and converting de-barked billets to pulp. In 1941, the only newsprint mill in Australia was established at Boyer on the Derwent; more recently, in 1962, a pulp mill began operations at Port Huon in the south. A further pulp and paper mill commenced production during 1970 at Wesley Vale near Devonport.

Further utilisation of forestry products has been introduced by factories producing plywood, hardboard, particle board, etc., while growing demand for woodchips for processing overseas has led to the creation of woodchip exporting companies.

Forest Area

In the next table showing details of Tasmania's total forest area, a distinction is made between *exploitable* and *potentially exploitable*. Potentially exploitable forest is too immature to warrant exploitation at present, or forest of higher quality where transport costs to the nearest market are prohibitive in present circumstances.

Obviously the distinction will change from time to time; for example the establishment of the wood pulp industry at Port Huon created a local market near forest areas once classed as only *potentially* exploitable, and created a demand for trees of lower grade than those used in sawmilling. Similarly the development of a wood chipping industry at Triabunna opened areas of forest on the East Coast which previously had been sub-economic.

Classification of Forest Area (Gross) at 30 June 1970 (a)
(⁰⁰⁰ Acres)

Forest Area	Located on—		Total
	Crown Land	Private Land	
Exploitable—Hardwood	2,620	1,114	3,734
Softwood	23	8	31
Total	2,643	1,122	3,765
Potentially Exploitable—Hardwood ..	2,110	435	2,545
Softwood ..	17	9	26
Total	2,127	444	2,571
Other Areas Classified as Forest	944	517	1,461
Estimated Total Forest Area	5,715	2,082	7,797

(a) Includes 56,600 acres of softwood plantations, and 900 acres of hardwood plantations at 30 June 1970.

The previous table includes all forests and plantations, whether easily accessible or not, and also the forested areas in scenic reserves. The next table gives details of that part of the total area which is under reservation ('reservation' in this context means land either used or to be used exclusively for forestry purposes; it includes also the forested areas of scenic reserves):

Forest Area (Gross) Under Reservation at 30 June 1970
(⁰⁰⁰ Acres)

Particulars	Pulpwood Concessions	Exclusive Forestry Permits	Scenic Reserves (a)	Other	Total
State Forests (b)	1,920	54	..	809	2,783
Timber Reserves (c)	171	..	..	69	240
Other Forested Reserves	2,222	104	408	..	2,734
Total ..	4,313	158	408	878	5,758

(a) Estimated forested component of national parks and scenic reserves.

(b) Land permanently dedicated to timber production.

(c) Land reserved for timber supply, including fuel.

Classification of State Forests

The classification by the Forestry Commission of the State Forests is a continuous process and a large section still remains unclassified. The position, according to latest figures available, is as follows:

Classification of State Forests at 30 June 1970 (^{'000 Acres})

Particulars				Area	
Commercial Forest—					
Eucalypt (sawlog quality)	..	..	..	554	
Eucalypt (pulpwood and firewood)	..	..	..	260	
Regrowth (immature forest)	..	..	..	211	
Rain Forest (myrtle, sassafras, etc.)	..	..	..	238	
Cleared Land (deforested areas)	..	..	..	62	
Total Productive Forest	..	..	..		1,325
Protection Forest—					
Scrubland and Plains	..	..	..	345	
Barren and Waste	..	..	..	255	
Total Unproductive Forest	..	..	..		600
Total Classified Forest	..	..	..		1,925
Total Unclassified Forest	..	..	..		858
Total State Forest	..	..	..		(a) 2,783

(a) Includes area as proclaimed at 30 June 1970 (2,635,420 acres plus 147,797 acres, the additional area disclosed by revised mapping).

The State Forests are located, in the main, in four distinct regions: (i) far north-west about the axis of the Arthur River; (ii) north-eastern highlands; (iii) north and north-west of the Great Lake; and (iv) from the south coast, north to Lake King William.

Forest Utilisation

Introduction

Numerous timber-using industries have been established in Tasmania including sawmills and industrial plants producing newsprint, paper, paper pulp, particle board and woodchips.

Although a relatively new industry, several woodchips manufacturing companies have secured contracts under which about two million tons of woodchips will be exported annually.

Establishment of this industry and the expansion of other timber-using industries has resulted in greatly increased annual timber requirements necessitating careful utilisation of existing forest resources and the development of viable reforestation schemes.

The problem of possible overtaxing of existing resources has been met partly by multiple use which, in effect, means the same logs supply the raw material for a number of purposes. Pulpwood is often obtained as a by-product from mill-logging operations while waste from sawmilling is used for the manufacture of woodchips, pulp and hardboard. Thinnings from Forestry Commission *Pinus radiata* plantations, which in the past were often discarded, are used in particle board manufacture.

Regeneration is carried out by the Forestry Commission and by the companies themselves. On Crown land reforestation is mandatory, the work in some areas being done by the companies and in other areas by the Forestry

Commission. In most cases, industries utilising privately-owned forest resources have established incentive schemes to ensure adequate reforestation.

In the sections that follow some of the more significant details are given for the State's major timber-using industries, excluding sawmills.

Paper, Hard-Board and Particle Board

Associated Pulp and Paper Mills Ltd and subsidiaries manufacture paper and hard lining-board at Burnie and particle board and paper at Wesley Vale. The company owns 250,000 acres of forested land and holds cutting rights over Crown land for fifteen miles on each side of the Emu Bay railway line from the north coast to the Pieman River.

In 1970 the company completed the first stage of its pulp and paper mill at Wesley Vale at a cost of \$25m. The first paper machine installed has an annual capacity of about 40,000 tons of magazine paper and provision has been made for the installation of three additional machines. Two small pulping units manufacture eucalypt cold soda semi-chemical pulp and *Pinus radiata* refiner-groundwood. A.P.P.M. Ltd plans to establish a large chemical pulp mill at Wesley Vale by 1978 which will duplicate present production from the Burnie complex.

Newsprint

Australian Newsprint Mills Ltd situated at Boyer on the Derwent River is Australia's sole manufacturer of newsprint. Its timber concession follows the general line of the Derwent as far north as Lake King William.

The *Florentine Valley Paper Act* 1966 increased A.N.M.'s concession area from 273,000 acres to 373,000 acres to provide the basis for an expansion programme expected to cost \$6.2m. The company is required by the Act to supply ten million super feet of logs to other timber-using industries each year. A third paper machine, installed as part of a recent expansion programme, came into production in January 1969 increasing annual capacity to 165,000 tons of newsprint. Output on this machine was progressively speeded-up and further ancillary equipment introduced to boost annual production to 200,000 tons by January 1972.

Wood Pulp

Australian Paper Manufacturers Ltd manufacture wood pulp at Port Huon on the Huon River. The pulp is shipped in pellet form to the company's paper mills in other States, principally to Botany, N.S.W.

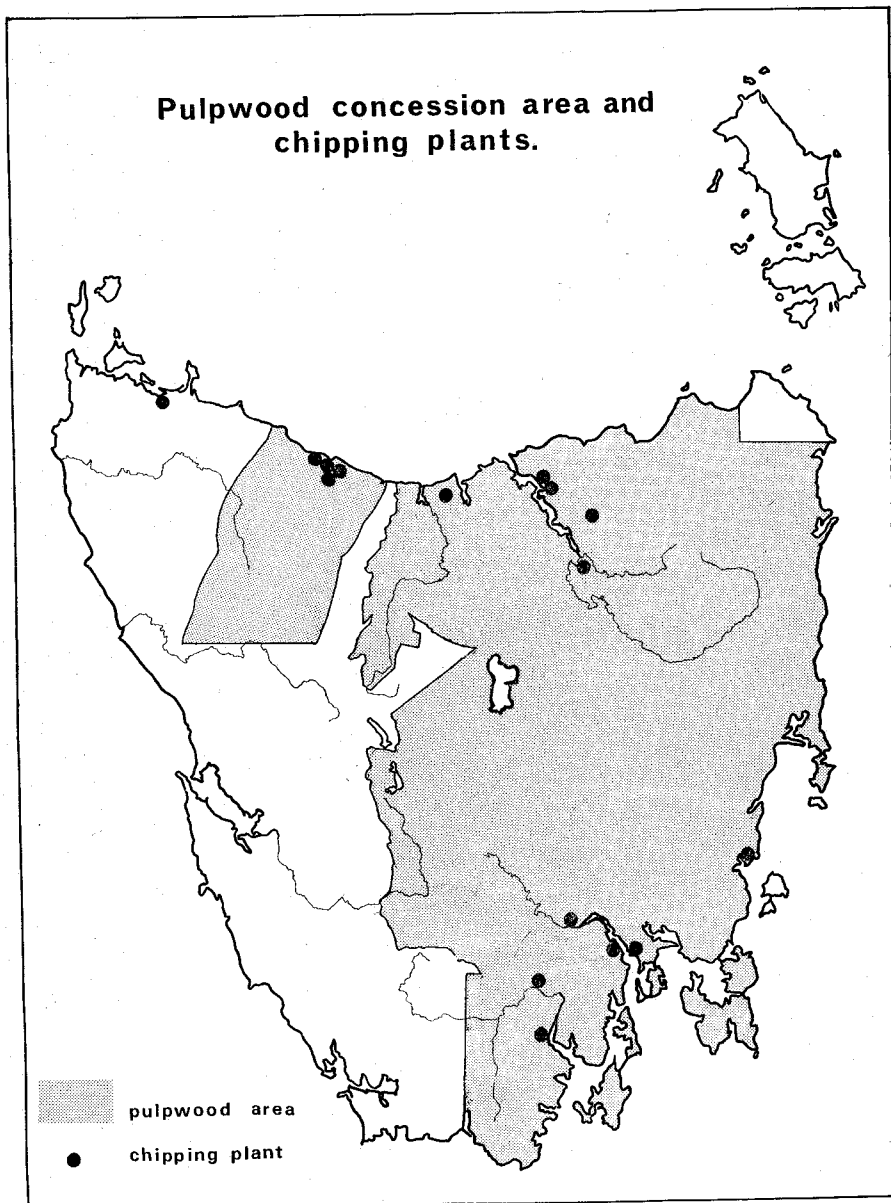
The company's pulpwood concession includes virtually the whole of the D'Entrecasteaux Channel coastline and the south coast as far west as Prion Bay; inland it extends west to the Mt Picton area. Also included in the concession are Bruny Island and the Tasman Peninsula.

Woodchips

Woodchips, manufactured from sawmill waste and other timber previously of little or no commercial value, are primarily used for wood pulp production. The development of a viable woodchip industry in Tasmania was preceded by a period of uncertainty during which, in the absence of stated Government policy, as many as six companies were reported to be planning woodchip projects.

Three Tasmanian companies, Northern Woodchips Pty Ltd, Tasmanian Pulp and Forest Holdings Ltd and Associated Pulp and Paper Mills Ltd have negotiated woodchips export contracts with Japanese interests. A number of other companies are undertaking feasibility studies or examining the viability of similar projects.

Before granting woodchips export licences, the Commonwealth Government stipulated that the companies, if they did not already have the capacity, should develop wood pulp manufacturing facilities within fifteen years.



Tasmanian Pulp and Forest Holdings Ltd plant at Spring Bay, near Triabunna on the East Coast, has an annual capacity of more than 600,000 tons of woodchips. Timber for the project comes from pulpwood concession areas extending along the Eastern Tiers from St Helens (110 miles north of Triabunna) to Buckland fifteen miles to the south-west. The Company has also been granted concessions over reserve areas covering much of central Tas-

mania. These areas will ultimately be used provided Tasmanian Pulp and Forest Holdings Ltd meets various stipulations contained in the *Pulpwood Products Industry (Eastern and Central Tasmania) Act 1968*. In addition the company is permitted to obtain pulpwood from areas in the reserve required by the Forestry Commission for silvicultural purposes or by utilising trees removed to open the forest for economic extraction of milling-quality timber.

The company's first woodchips were exported from the Spring Bay complex in April 1971.

Associated Pulp and Paper Mills Ltd and Northern Woodchips Pty Ltd are constructing their woodchips export plants at Long Reach near Bell Bay; both companies plan to start export operations in 1972.

Raw material for the A.P.P.M. Ltd project comes from Crown forest concessions, private forest holdings and sawmill waste. The plant has an annual capacity in excess of 600,000 tons of woodchips.

Unlike other woodchips exporting companies, Northern Woodchips Pty Ltd intends to draw all its pulpwood from private land holdings and sawmill waste.

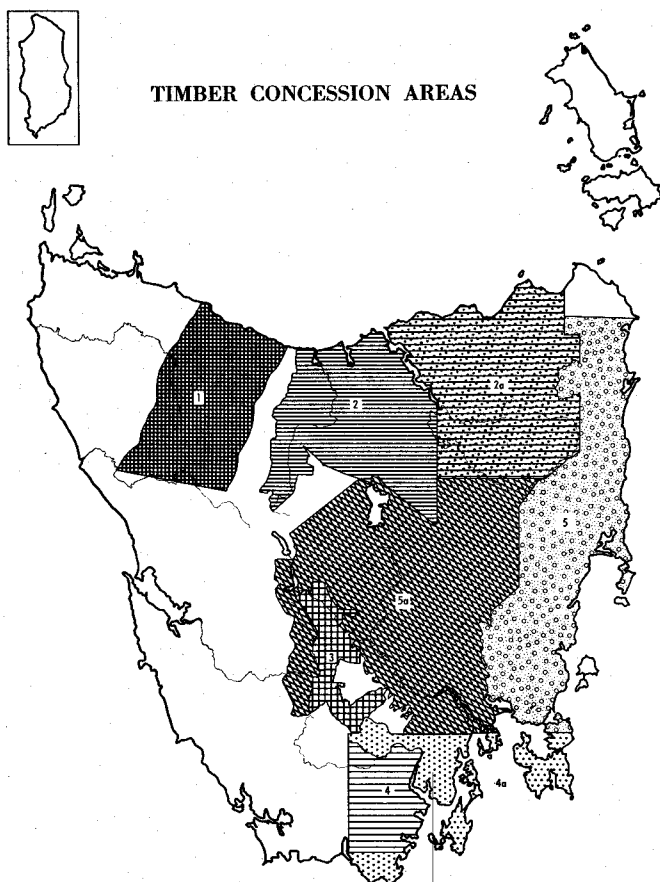
The company's fifteen-year contract is for an annual 700,000 tons of woodchips.

In addition to the major chipping plant at Long Reach, Northern Woodchips Pty Ltd has installed satellite chipping plants at various centres throughout the northern half of the State.

Timber Concession and Reserve Areas

The *Pulpwood Products Industry (Eastern and Central Tasmania) Act 1968* granted concession and reserve areas over much of eastern and central Tasmania to Tasmanian Pulp and Forest Holdings Ltd (see previous map). T.P.F.H. may only utilise the timber resources of the reserve area subject to certain requirements, contained in *Part II, Section ix* of the Act. The company must obtain written permission from the Forestry Commission to extract pulpwood from the reserve area. Authorisation is subject to the establishment of an approved wood pulp undertaking and annual usage of pulpwood by the pulping establishment of not less than 200,000 tons. The company is also permitted to obtain pulpwood from areas in the reserve required by the Commission for silvicultural purposes or by utilising trees removed for the purpose of opening the forest for the economic extraction of milling-quality timber.

The establishment in Tasmania of various industries using forest resources has given rise to the need for some guarantee of assured timber supplies to those industries. Therefore certain concessions and cutting rights on Crown lands have been awarded to companies relying on forest products as their raw materials. The following map shows the location of concession and reserve areas in Tasmania. Concession areas are those areas where a company is at present allowed to operate while reserve areas are set aside for future use. Providing that the company meets certain stipulated conditions, permission to remove timber from the reserve area will be granted by the Forestry Commission.



A.P.P.M.: (1) Burnie Concession Area; (2) Wesley Vale Concession Area; (2a) Wesley Vale Reserve.

A.N.M.: (3) Concession Area.

A.P.M.: (4) Concession Area; (4a) Reserve.

T.P.F.H.: (5) Concession Area; (5a) Reserve.

Definition of Forest Production

The cutting of logs in a forest and the production of sawn timber in a mill seem closely related activities and may both, in fact, be conducted by a single operator with the same team of employees; similarly, the cutting of pulpwood and its later conversion to newsprint or fine paper may be viewed, in a broad sense, as a single activity. For statistical purposes, however, saw-mills, paper mills, newsprint mills, etc. are classified as factories and the raw materials (logs, etc.) on which they operate are treated as the product of the forestry sector of primary industry. It necessarily follows that the definition of forest production must be restricted to include only the output of logs, hewn timber, firewood, tanning bark, etc. before such products have passed into the

sector covered by factory statistics (e.g. logging is a forestry activity, sawmilling a factory activity). Some forestry products, as just defined, (e.g. fence posts and rails, hewn sleepers, firewood, etc.) may go direct to the final consumer without passing as a raw material to the factory sector.

Subsequent tables dealing with forest production give details of quantity and value; the following definitions apply:

Measurement of Volume

The three convenient units for expressing the volume of timber are cubic feet, true super feet and hoppus super feet. The volume in true super feet can be derived from this relationship:

- (i) One true super foot equals one cubic foot divided by twelve. (A true super foot is the volume equivalent to a solid body, one foot long by one foot wide by one inch thick.)

The remaining measure, hoppus super feet, is used in the forest to record log volumes and is derived from the following formula for dealing with round timber:

- (ii) Volume in hoppus super feet = (One quarter the average girth in inches) squared, the result being multiplied by the length in feet and divided by twelve.

The relationship between hoppus super feet and true super feet can be stated as follows:

$$(iii) \frac{\text{Volume in hoppus super feet}}{\text{Volume in true super feet}} = \frac{\pi}{4} = 0.7854$$

In this section, the volume of logs, timber, etc. is expressed in true super feet, some data originally received in terms of hoppus super feet having been converted.

Value of Forest Production

Gross Value of Production is the value placed on the recorded production at the wholesale price realised in the principal markets. In cases where forestry products are consumed at the place of production or where they become raw material for a secondary industry, these points of consumption are presumed to be the principal markets (e.g. the value of logs cut for sawmilling is the value on the mill skids).

Local Value (i.e. value of recorded production at the place of production) is ascertained by deducting marketing costs from gross value. Marketing costs include freight, cost of containers, commission, and other charges incidental thereto.

In other production sectors, local value of production is further reduced by subtracting the value of materials used in the process of production, the final figure being *net value of production*. In the forestry sector, however, these data on the cost of materials are not available and therefore the only two measures available are: (i) gross value of production; and (ii) local value of production.

Duplication: Until 1968-69, the value of logging operations was included *only* in the forestry sector and excluded entirely from the manufacturing sector. The changed concept of the establishment, introduced in the 1968-69 manufac-

turing census, involves some logging activity being recorded in the operations of sawmills; in 1969-70, the value of such activity double-counted (i.e. included in both manufacturing and forestry sectors) was \$1.6m.

Source of Production Data

The principal sources of data are the returns of the various establishments classified as factories (e.g. sawmills, newsprint mills, paper mills, plywood mills, etc.) which report details of logs, pulpwood, sawmill edgings, off-cuts, etc. used as raw materials; other data are available from the State Forestry Department and the Bureau's export figures.

Statistics of Forest Production

The next table shows the production of the various forest products and from where they are obtained, i.e. either Crown or Private land.

In the table below and those following tanning bark is included in the value of production figures. The bark, important in the pre-war period, is obtained from the 'black' wattle, *Acacia mollissima*, and is used in the hide tanning industry.

The following table shows details of forest production:

Forest Production, 1969-70

Product	Obtained from—		Total
	Crown Land	Private Land	
Logs for Sawing, Peeling, Slicing or Pulping—			
Forest Hardwoods .. '000 sup ft true	494,436	217,282	711,718
Indigenous Softwoods .. '000 sup ft true	6,294	..	6,294
Plantation Grown Pines.. '000 sup ft true	18,996	11,252	30,248
Total Logs—Quantity .. '000 sup ft true	519,726	228,533	748,260
Gross Value \$'000	n.a.	n.a.	15,299
Hewn and Other Timber (not included above)—			
Firewood—Weight '000 tons	23	365	389
Gross Value \$'000	n.a.	n.a.	2,835
Other (Gross Value) (a) \$'000	n.a.	n.a.	204
Total Gross Value of Forest Products \$'000	n.a.	n.a.	18,338

(a) Includes sleepers, transoms, girders, bridge timbers, mining timber, poles, piles and other forest products such as tanning bark, etc.

In the previous table, log production is a composite figure including the log input of sawmills and the log equivalent of cords of pulpwood taken into paper mills and newsprint mills.

The next table shows details of forest production for a five-year period on a basis comparable with the previous analysis (logs in true volume):

Forest Production

Product		1965-66	1966-67	1967-68	1968-69	1969-70
Logs for Sawing, Peeling, Pulping, etc.—						
Forest Hardwood ..	m sup ft	667.9	690.4	683.0	695.0	711.7
Indigenous Softwood ..	m sup ft	3.5	3.9	4.5	4.4	6.3
Plantation Grown Pines ..	m sup ft	25.4	23.6	22.2	21.9	30.2
Total Logs—Quantity	m sup ft	696.7	717.9	709.7	721.3	748.3
Gross Value ..	\$'000	13,105	13,109	13,024	13,326	15,299
Hewn and Other Timber (not included above)—						
Firewood—Weight ..	'000 tons	440	444	377	367	389
Gross Value ..	\$'000	2,083	2,557	2,191	2,426	2,835
Other (Gross Value) (a) ..	\$'000	802	962	(b) 273	132	204
Total Gross Value of Forest Products ..	\$'000	15,990	16,627	15,488	15,885	18,338

(a) Includes sleepers, transoms, girders, bridge timbers, mining timber, poles, piles, tanning bark, etc.

(b) Not comparable with previous years' figures.

Tasmanian and Australian Log Production

In the last table, log production is defined as relating to 'Logs for Sawing, Peeling, Slicing or Pulping', (i.e. it includes logs used in sawmills as well as those used for production of woodpulp in newsprint and paper mills). In terms of this definition, Tasmania is a major producer, the State's log production being over seventeen per cent of the Australian total in 1968-69; the ranking of the major producers was Victoria with 26.2 per cent and N.S.W. with 21.7 per cent. Considering Tasmania's small relative size and population, it is apparent that forest production is one of its more important contributions to the Australian economy.

Gross and Local Value of Production

The following table gives details of gross and local values of forestry production for a five-year period:

Gross and Local Value of Forestry Production
(\$'000)

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
Gross Value (Production Valued at Principal Markets) ..	15,990	16,627	15,488	15,885	18,338
Less Marketing Costs ..	2,154	2,295	2,068	2,467	2,765
Local Value (Production Valued at Place of Production) ..	13,837	14,332	13,420	13,418	15,572

Timber and Timber Products

Mill Production of Timber

In 1969-70, logs treated in sawmills and plywood mills for the production of sawn, peeled and sliced timber totalled 427m super feet (true volume); the resulting timber totalled 164m super feet. A geographical distribution is not available for this activity in 1969-70 but a 1967-68 distribution of logs treated showed the following percentages: North Western Division 35.2; North Eastern 15.1; Midland 11.3; North Midland 10.6; Southern 9.7; Hobart 6.1; North Central 6.2; South Eastern 3.1; and Western 2.6.

The difference between the volume of logs treated and of timber produced is not all waste from the millers' points of view. Admittedly, there is very limited use for sawdust but some offcuts are sold to the wood pulp industry and other waste is docked and sold as firewood. The introduction of the wood-chip industry is providing another use for mill offcuts.

Output and Exports

The following table shows timber production by mills for a five-year period, together with exports of sawn timber:

Production and Exports of Sawn Timber

Particulars	1966-67	1967-68	1968-69	1969-70 ^p	1970-71 ^p
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LOGS TREATED ('000 Super Feet True)

Hardwood	440,579	447,188	454,963	444,894	435,518
Softwood	11,468	8,818	11,755	12,499	11,465
Total	452,047	456,007	466,719	457,394	446,984

SAWN, PEELED OR SLICED TIMBER PRODUCED FROM LOGS TREATED (a) ('000 Super Feet)

Hardwood	170,075	171,972	171,209	169,805	167,113
Softwood	4,319	3,253	4,400	5,491	4,984
Total	174,394	175,225	175,609	175,296	172,097

EXPORTS OF SAWN TIMBER (b) ('000 Super Feet)

Total	79,447	77,897	82,609	87,824	
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VALUE OF EXPORTS OF SAWN TIMBER (b) (\$'000)

Total	13,672	13,492	15,329	16,238	
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(a) Rough sawn timber including that subsequently seasoned and dressed to produce flooring, weatherboards, etc.

(b) Includes dressed and undressed timber.

Employment

The next table shows the number of sawmills and the number of persons employed. Comparable data for later years are not available.

Number of Sawmills and Persons Employed (a)

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
Number of Sawmills	305	308	289	279	274
Average Number Employed During Year—					
Males	2,701	2,793	2,880	2,834	2,745
Females	53	57	62	58	56
Persons	2,754	2,850	2,942	2,892	2,801

(a) In mills; excludes those engaged on logging operations.

In recent years a number of small mills, particularly those operated on a part-time basis by orchardists for the cutting of case timber, have gone out of production. At the same time, the larger more efficient mills have intensified their operations, the result being a general rising trend in the number of persons employed by the larger mills.

Production of Wood Pulp and Paper

Details of paper and newsprint production are not available for publication but wood pulp figures are an indicator of activity.

Wood pulp is the basic material in the production of paper, newsprint, etc. and is made by any one of three processes, namely mechanical, chemical, or a combination of the two methods; the last process is referred to as 'semi-chemical'. The basic technological problem in producing satisfactory pulp from some eucalypt species, and from some other pulpwoods, was related to the relative shortness of their wood fibre; in the semi-chemical process, the preliminary chemical treatment of the wood reduces the amount of grinding required and thus prevents excessive fibre destruction. The following table shows production of wood pulp over a five-year period, together with employment details for the industry:

Paper Making

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
Number of Establishments ..	4	4	4	4	4
Average Number Employed During Year—					
Males	2,863	2,887	3,029	3,042	3,110
Females	510	448	527	546	570
Persons	3,373	3,335	3,556	3,588	3,680
Wood Pulp Produced (a) tons	157,413	172,130	181,868	198,566	183,779

(a) Ground wood pulp, chemical and semi-chemical pulp.

Comparable data for later years are not available, apart from wood pulp production—223,199 tons in 1968-69 and 267,216 tons in 1969-70.

The State Forestry Commission

The State Forestry Commission consists of a chief commissioner and two assistant commissioners. At 30 June 1970 the Commission employed a work force of 621, including administrative staff.

Total expenditure by the Commission during 1969-70 amounted to \$3.7m. This expenditure was funded from Loan Funds and Consolidated Revenue. Money collected each year (mainly from timber royalties) is paid into Consolidated Revenue and, by law, becomes a grant to the Commission the following year.

The Forestry Commission is primarily concerned with the conservation of Tasmania's forests; this requires that it should exercise control over the rate at which logs and pulpwood are taken, and also that it should introduce effective measures to ensure regeneration. Other important functions include: (i) fire prevention and suppression; (ii) road construction to give access to forests; (iii) development of plantations. Some concept of the scope of Forestry Commission activities can be obtained from the following table:

Activities of Forestry Commission: Summary
(Source: Forestry Commission)

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
Production of Seedlings '000	1,876	2,104	2,725	3,038	2,767
Plantations—					
Established acres	3,489	3,251	4,695	4,351	4,641
Pruned... .. acres	2,782	2,324	1,957	1,987	1,795
Thinned acres	851	597	859	1,021	1,022
Firebreaks—					
Constructed miles	75	67	59	86	79
Secondary Roads—					
Constructed miles	81	71	92	75	83
Improved miles	19	12	16	20	21
Major Roads—					
Constructed miles	28	19	24	31	23

The table below shows the mileage of major and secondary forest access roads maintained by the Forestry Commission. Forestry roads are roads originally constructed or improved by the Commission, while 'sawmillers' roads are those which have been constructed by sawmillers and are currently being maintained by the Commission.

Forestry and Sawmillers' Roads Maintained by the Forestry Commission
at 30 June 1970
(Miles)

Municipality	Forestry Roads	Sawmillers' Roads	Total
King Island	16.0	..	16.0
Circular Head	134.8	164.2	299.0
Waratah .. .. .	..	53.8	53.8
Wynyard	54.0	41.5	95.5
Penguin	24.9	36.3	61.2
Ulverstone	46.5	19.1	65.6
Kentish	26.3	18.1	44.4
Latrobe	33.2	23.4	56.6
Burnie	9.3	19.8	29.1
Devonport .. .. .	..	..	..
Deloraine	112.2	57.8	170.0
Beaconsfield	21.7	..	21.7
George Town	11.5	..	11.5
Lilydale	51.7	..	51.7
Scottsdale	179.1	5.0	184.1
Ringarooma	93.3	20.0	113.3
Fingal	302.4	..	302.4
St Leonards	22.0	..	22.0
Portland	148.5	..	148.5
Westbury	9.5	8.5	18.0
Esperance	222.5	2.9	225.4
Huon	36.6	..	36.6
Bruny Island	36.2	5.4	41.6
Tasman	25.8	..	25.8
Sorell	10.3	..	10.3
Hamilton	2.1	..	2.1
Strahan	8.5	..	8.5
Total	1,638.9	475.8	2,114.7

The Commission has a responsibility for preventing and fighting forest fires; losses through bush fires fought by the Commission are reported in the following table:

Bush Fires Fought by Forestry Commission
(Source: Forestry Commission)

Year	Fires Reported	Area Burnt				Cost of Suppression
		State Forest	Other Crown Land	Private Property(a)	Total (a)	
	no.	acres	acres	acres	acres	\$
1963-64	252	19,706	35,352	11,460	66,518	72,624
1964-65	146	4,037	4,701	3,077	11,815	31,828
1965-66	317	33,015	50,489	45,643	129,147	71,918
1966-67	264	83,954	194,979	147,286	426,219	108,018
1967-68	230	15,808	59,023	20,874	95,705	61,032
1968-69	87	3,538	6,055	1,612	11,205	18,722
1969-70	118	4,828	8,222	2,322	15,372	21,962

(a) Includes only those fires on private property fought to protect adjoining State Forest or timbered Crown Land.

The main revenue of the Forestry Commission is derived from royalties, i.e. charges paid by those taking timber from Crown lands. By law, such revenue is specifically reserved for expenditure on forestry. The next table has been compiled to show the revenue and expenditure of the Commission for the last five years; expenditure exceeds revenue since money from State loan funds devoted to forestry purposes is included in expenditure.

Forestry Commission: Revenue and Expenditure
(£'000)

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
REVENUE					
Royalties	1,427	1,480	1,492	1,496	1,537
Sale of Forest Products	34	32	101	75	89
Other	40	45	9	27	27
Total	1,500	1,557	1,603	1,598	1,653
EXPENDITURE (a)					
Administration—					
Revenue Collection	117	113	147	180	196
Forest Management	492	412	414	449	496
General	327	313	364	375	381
Forest Works—					
Road Construction	809	700	702	763	752
Building and Other	69	136	66	75	105
Afforestation and Reforestation	789	935	1,020	1,070	1,140
Forest Protection (n.e.i.)	87	112	119	122	134
Mapping and Surveys	73	92	80	92	102
Land Purchases	8	9	2	6	7
Purchase, Plant and Equipment	27	16	24	57	36
Interest on Advances (b) .. ..	..	257	286	314	350
Total	(c) 2,798	3,095	3,226	3,503	3,699

(a) Aggregate expenditure from all sources, i.e. Consolidated Revenue, Loan and Trust Funds

(b) From 1966-67 Forestry Fund Account charged with interest on advances from State Loan Fund; no charge raised in previous years.

(c) Not comparable with following totals; see note (b).

Commonwealth-State Agreement

The Federal *Softwoods Forestry Agreements Act* 1967 was passed with the specific intention of increasing the rate of softwood plantings in Australia by providing Commonwealth financial assistance to the States. Under the Act each State is allocated: (i) *a base year* area of softwood plantings which is financed by the State; (ii) *a scheduled* area in excess of the base year figure, the excess being financed by special Commonwealth loans. The base year area is constant for each year of the five-year programme which commenced in 1966-67.

Main features of the special Commonwealth loans are: (i) repayment of advances, in 50 half-yearly instalments, is deferred until July of the eleventh year after the date on which payment was made to the State; (ii) the State may repay any portion of the advances at any time prior to the date that payment falls due; and (iii) the loans are interest free for a period of ten years after which interest accrues on the outstanding balance.

The *base year* areas (financed by the State) of softwood plantings are: N.S.W., 8,100 acres; Vic., 6,000 acres; Qld, 5,200 acres; S.A., 4,500 acres; W.A., 3,000 acres; Tas., 1,940 acres. Tasmania's scheduled softwood plantings (with Australian totals in brackets) for the five years ended 30 June are: (in acres) 1967, 4,100 (40,500); 1968, 4,100 (47,600); 1969, 4,400 (53,300); 1970, 4,600 (56,900); 1971, 4,900 (58,500). In 1969-70 the State Forestry Commission planted 4,641 acres.

The Commonwealth aim is to establish two million acres of pine plantations in the next 40 years and Tasmania's target, as part of the plan, is 200,000 acres.

MINING

Introduction

For statistical purposes, mining is taken to cover the operations normally thought of as mining and quarrying (i.e. the removal from underground or surface workings of ores, etc.), the recovery of minerals from ore dumps, tailings, etc. and ore dressing (i.e. concentration and other elementary treatment). It does not include the smelting and/or refining of metallic minerals or the processing of non-metallic minerals (e.g. limestone into cement); these operations are classified as manufacturing.

In the present Tasmanian economy, two important metals will serve to illustrate the distinction between mining and manufacturing: aluminium, produced at Bell Bay on the Tamar and zinc at Risdon near Hobart. In terms of the previous definition, the two metals are considered to be the output of manufacturing and only a small part of their total value is attributable to the mining industry in Tasmania. In the case of aluminium, no Tasmanian ores or concentrates are used and no value accrues to the Tasmanian mining industry. A substantial part of the value of the aluminium, is, in fact, accounted for by imported materials. Zinc is produced from both imported and locally-produced concentrate, but only the value of the local concentrates produced at Rosebery is included in the Tasmanian mining industry. The same principle applies with the State's iron-ore pellet industry, i.e. extraction of the ore is classified as mining but pellet-making is classified as manufacturing.

Sources of Information

(i) *Before* 1968-69, all mining and quarrying statistics were collected on a calendar year basis from the following sources: (i) Bureau of Census and Statistics' annual Census of Mines and Quarries; (ii) quarterly collections conducted by the State Department of Mines; and (iii) information supplied by the Commonwealth Bureau of Mineral Resources.

(ii) *From* 1968-69 the Bureau's annual collection has been conducted on a fiscal year basis. However, both calendar and fiscal year statistics of commodity output published by the Bureau are derived from Mines Department quarterly returns supplemented by information from the Bureau of Mineral Resources.

Historical

Supply and Demand

Tasmanian mining activity has been subject to frequent and severe fluctuations, mainly as a result of changes in supply and demand, which are reflected in the market prices of particular metals. Factors which have contributed to this instability are: (i) *Supply*—market prices may fall with the discovery or working of major ore-bodies; (ii) *Demand*—large-scale purchases of particular metals either to meet unforeseen contingencies or to stock-pile for future requirements may lead to rises in market prices; and (iii) *Technological change*—the development of more economic recovery methods may lead to the working of previously unusable large scale deposits. Developments in industry may also lead to the setting-up of a new market or collapse of an established market in particular metals.

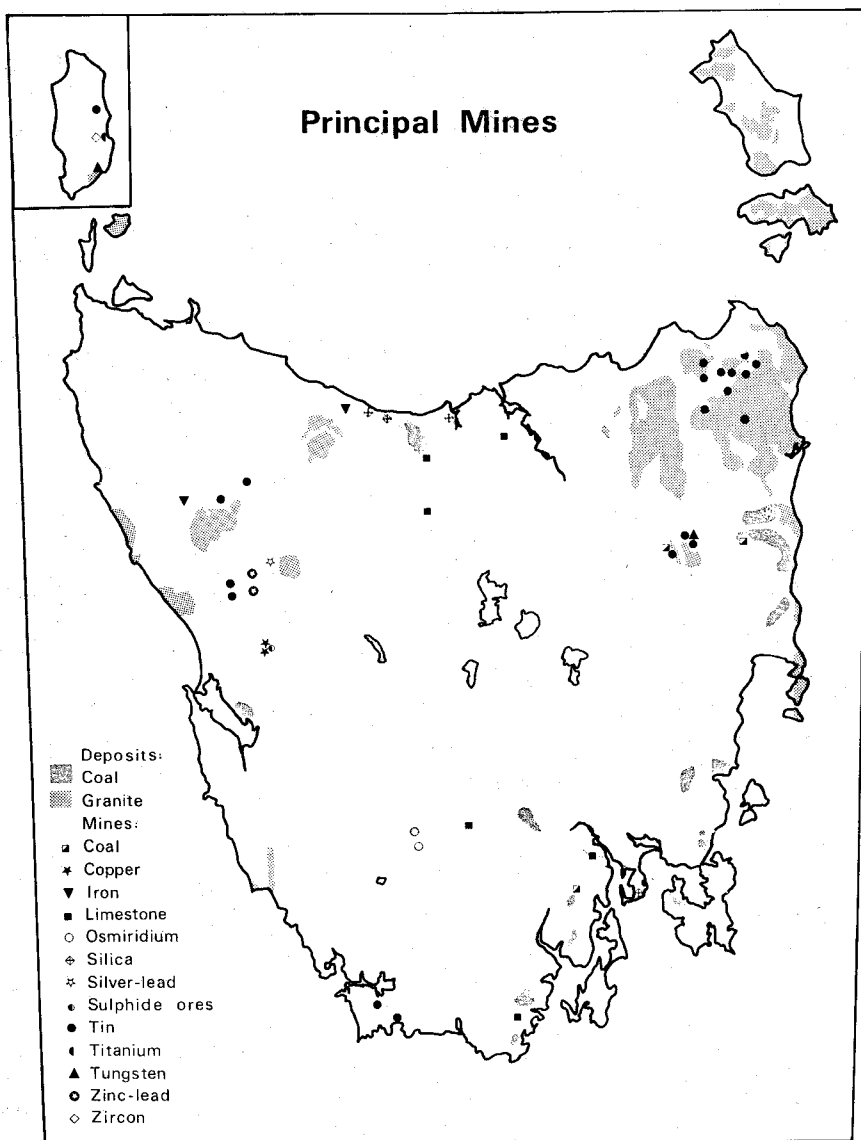
The effects of these and other factors have been offset to some degree by the establishment of controlling bodies such as the International Tin Council. In efforts to stabilise the markets such bodies may exercise control over prices or introduce production quotas.

Definition of Mining

Unfolding the record of the various minerals produced in the State is made difficult by the manner in which previous official mining statistics were compiled. In current statistics, a distinction has been made, in broad terms, between mining a mineral and subsequently refining it to obtain its metallic content—the second process is classified as manufacturing. However, this distinction was not made in earlier statistics and therefore historical comparisons cannot be made with any accuracy. A further difficulty occurs with regard to the value of ores which, in older series, were valued, in the main, according to the world price for their estimated metallic content, irrespective of whether the extraction was carried out in Tasmania itself, in other States or in overseas countries. Thus the earlier historical value series is inflated and does not reflect the true earnings of mineral producers within the State. In the evolution of a proper basis for current mining statistics, the chief requirement was to satisfactorily define a border between mining and factory activities and, for Tasmanian data, this was not accomplished until 1952 when the Bureau of Census and Statistics conducted its first mining census. From 1952 the mining census has been conducted on an annual basis.

Because of the definitional difficulties just listed, the historical account of mining in the State has been deliberately restricted largely to details of physical production; other measures such as employment, value of output, wages and salaries paid, etc. are not comparable with those used in the series commencing 1952.

The accompanying map shows the locations of major mines operative during 1968-69. The sites only are marked and no indication of size is given as the scale of mining varies greatly, even within the mining of the same metal e.g. the West coast lode tin mines are significantly larger than the alluvial tin mines of north eastern Tasmania.



Coal

Early Fields

The site of Tasmania's first mine was on Tasman Peninsula where the convicts from Port Arthur mined 60 tons of coal in 1834. Highest production was 10,400 tons in 1840 but, within three years, the work ceased due to the poor quality of the coal and discoveries at other sites. The island's principal

coalfields eventually were opened up in the Fingal Valley. In 1885 State production was 6,654 tons; in 1886, 10,391 tons, of which the Fingal area contributed 3,820 tons. In 1890 Fingal had reached a dominant position and in that year accounted for 44,946 tons of the 53,812 tons mined in Tasmania.

Decline in Production

By 1920, annual production had reached 75,000 tons; by 1950, it exceeded 220,000 tons. The peak production year was 1959-60 with an output of over 300,000 tons but since then there has been a decline due to competition from oil. (The introduction of diesel locomotives contributed, in minor degree, to the fall in demand but the major factor has been a change from coal to oil fuel in manufacturing industries.) Throughout this whole period, from 1886 till today, the mines of the Fingal Valley have been the State's principal source of coal. In 1967, Tasmanian annual production had fallen to 77,000 tons.

To alleviate hardship and unemployment brought about by the decline of the industry, the Forestry Commission has begun developing exotic pine plantations in the Fingal valley to provide gainful employment. However, the use of coal fuel in industry has been officially encouraged. The chief consumer is Australian Newsprint Mills at Boyer and use of coal by this company contributed to a 38.5 per cent increase in production in 1969. Production in 1970-71 was 123,500 tons.

By Australian standards, the State's black coal production has never been on a large scale and even in the year of peak Tasmanian production (1959-60), it represented only one and a half per cent of the Commonwealth total to which N.S.W. contributed nearly 80 per cent. (This total excludes brown coal mined in very large quantities almost exclusively in Victoria.)

Gold

The first appearance of gold mining in *Statistics of Tasmania* dated from 1866 when crushing at Fingal in the north-east produced 347 ounces from 2,872 tons of quartz. In actual fact, gold had been discovered much earlier, in slate rocks near Lefroy in 1849 and then at Mangana near Fingal in 1852, the second find setting off a minor gold rush to the alluvial diggings.

During 1859 the first quartz mine started operations at Fingal; in the same year James Smith (better known as 'Philosopher Smith') and Peter Lette found gold at the River Forth and at the Calder. Reef gold was discovered in 1869 at Lefroy. The first recorded returns from the Mangana fields date from 1870; Waterhouse, 1871; Hellyer, Denison and Beaconsfield, 1872; Lisle, 1878; Gladstone and Cam, 1881; Minnow and River Forth, 1882; Branhholm, 1883; and Mt Lyell, 1886.

The largest single source of gold was the 'Tasmania Mine' at Beaconsfield which began operating in 1878. The effect of Beaconsfield operations can be judged from the following State gold production figures (in ounces): 1877, 5,777; 1878, 25,249; 1879, 60,155. Employment in gold mining in 1879 was stated to exceed 2,000 men. Peak gold production for the State was reached in 1899 with 83,992 ounces but this was still only a minor contribution—just over two per cent—to the Australian total.

Ranked in order of accumulated yield, the State's three principal gold mining centres were Beaconsfield, Mathinna and Lefroy. The 20th century witnessed a decline in Tasmanian gold mining, as such; when the 'New Golden Gate' at Mathinna closed in 1912, State annual gold production had fallen to 37,973 ounces. In 1919, with the closure of the 'Tasmania Mine' at Beaconsfield, annual gold production fell to 7,686 ounces.

Today there are no gold mines, as such, operating but gold is still produced as a by-product from other minerals, principally concentrates of lead-copper, copper, lead and zinc. The assayed gold content of Tasmanian minerals mined in 1970-71 was 42,240 fine ounces, compared with a Commonwealth total of 612,092 fine ounces (i.e. the Tasmanian proportion had increased to 6.9 per cent).

Following tests by the State Mines Department to determine the feasibility of re-opening the 'Tasmania Mine', a licence was granted to Allstate Explorations Pty Ltd to investigate the mine. The company is currently studying the operation to determine its viability.

Tin

In 1871 James ('Philosopher') Smith discovered 'tin oxide' (cassiterite) at Tinstone Creek near Mt Bischoff which was destined to become the greatest tin deposit known in the world. The Bischoff discovery was followed by numerous others, first in the north-east and then at Mt Heemskirk on the west coast. The Mt Bischoff Tin Mining Company, formed to work the deposit, had paid dividends totalling £177 per £5 share by 31 December 1907. Before production ceased, shortly after World War II, Mt Bischoff had yielded more than 80,000 tons of tin ore.

Main production today is centred on Renison Bell and Luina on the west coast and Rossarden, Gladstone and South Mt Cameron in the north-east.

In 1970-71, the assayed tin content of tin concentrates produced throughout Australia was 8,750 tons, the Tasmanian component being 5,238 tons. Some concept of the earlier scale of Tasmanian tin mining can be obtained from these export figures: average annual Tasmanian exports of tin, decade ending 1890, 3,800 tons; decade ending 1900, 2,650 tons. A mixture of export and production figures in the decade ending 1910 suggests that tin production had lifted to an annual average of 3,350 tons. In 1920, annual production fell to 1,310 tons and, since then, has often been below 1,000 tons.

There has been an upsurge in tin production in recent years, the result of vigorous exploration programmes undertaken in the 1960s during which potential tin bearing areas were examined. Two significant operations emerged—Cleveland Tin at Luina and Renison Ltd at Renison Bell. Both resulted from the development of known ore-bodies and the discovery of new ore-bearing lodes. The mines have introduced modern methods of underground mining and new treatment plants have been installed. Tin previously lost in plant tailings is now recovered following introduction of cassiterite flotation methods.

Silver

The rush to the Zeehan-Dundas area, where silver-lead ore was discovered in 1882, commenced in 1888 and by 1891, 159 companies and syndicates were operating in the area. Initial rich returns led to the installation of a smelting plant at Zeehan. However, the rich surface ores were soon depleted; payable ore was located only below 600 feet and the field gradually declined after the closing of the Zeehan smelters in 1909.

The State still produces silver but mainly as a by-product of copper mining at Mt Lyell and zinc-lead mining at Rosebery. Operations at the Farrell Mine at Tullah were in the past regarded as 'pure' silver-lead mining because the zinc content was not recovered. The mine is now owned by the Electrolytic Zinc Company (A/asia) Ltd and the ore is treated at Rosebery together with

zinc-lead ore from the company's Rosebery and Williamsford mines. There is no silver production from the once famous Zeehan fields but detailed exploration work now in progress could result in re-establishment of mining activities. In 1970-71, the assayed silver content of Tasmanian mine production was 1,584,780 fine ounces, approximately 6.8 per cent of the corresponding Australian total. N.S.W. and Queensland are the leading producers.

Copper

The history of the Mt Lyell field dates from 1883 when the McDonough brothers and Johannes Karlson discovered the 'Iron Blow' outcrop. Isolation impeded development of the field and the transport problem was not solved until 1899 when the Mt Lyell Company's railway reached Strahan. The following year the North Mt Lyell Company completed a railway between Linda and Kellys Basin. The absurdity of two railways in the same area ended in 1903 with an amalgamation of the two companies.

Low-cost pyritic smelting was perfected at Mt Lyell in 1902 and as a result a smelting industry was established at Queenstown. In 1969 the smelter was closed down and subsequently concentrate has been shipped to Port Kembla and Japan for processing.

Mt Lyell, for many years Australia's leading copper mine, still ranks high among Australian producers and is currently increasing production. The open-cut at West Lyell is the principal source of ore although this will be phased out ultimately in favour of underground mining which, in 1970, accounted for almost one-third of the Mt Lyell ore production.

Copper is also produced in conjunction with mining operations in other areas and production from these sources amounted to about 2,000 tons in 1970.

In 1970-71, the assayed copper content of Tasmanian mineral production was 23,794 tons, or about fourteen per cent of the corresponding Australian total, Queensland being the principal producing State. About 90 per cent of the Tasmanian total derives from Mt Lyell ores but there is also a copper content in the ores mined at Rosebery and Williamsford.

Zinc

The complex Rosebery ores were discovered near Mt Read in 1894 but it was not until 1925, when the Electrolytic Zinc Company of Australasia commenced smelting the Rosebery ores at Risdon, that full-scale development of the field commenced. The Rosebery mines have been in continuous production since 1925, apart from a temporary shut-down in the period 1930-1936 when depressed world zinc prices curbed production.

Mine output comes from three mines: the Rosebery mine at the foot of Mt Read (90 per cent of total output); the Hercules mine at Williamsford, some 2½ miles south of Rosebery; and the Farrell mine at Tullah, on the Murchison Highway six miles north-west of Rosebery. Total annual capacity of the mining complex was almost doubled following the completion in 1971 of a new shaft at the Rosebery mine.

In 1970-71, the assayed zinc content of Tasmanian mine production was 40,024 tons, approximately nine per cent of the corresponding Australian total; N.S.W. was the major producer of zinc bearing ores. Tasmania is still the leading producer of refined zinc, the recovery process using both local and interstate concentrates. Production constitutes about 64 per cent of the Australian total.

Lead

The mining fields at Zeehan and Dundas were established to obtain silver from silver-lead ores; lead was produced as a by-product. Silver-lead mining has long ceased on the Zeehan fields. The Farrell mine at Tullah produces silver-lead ore which is treated at Rosebery with zinc-lead ores from Rosebery and Williamsford. These ores are now the principal source of lead in Tasmania.

In 1970-71, the assayed lead content of Tasmanian mine production was 12,296 tons, about three per cent of the corresponding Australian total; N.S.W. and Queensland are the principal producers.

Tungsten

Tungstic oxide (WO_3) occurs in two forms: in scheelite (calcium tungstate) and wolfram (iron manganese tungstate). There is a marked distinction between the mining of scheelite and of wolfram. Whereas scheelite in Tasmania is mined for its WO_3 content, wolfram is usually found in association with tin. Production of wolfram began in 1906 at Moina in the north-west but now comes from mixed tin-wolfram mines in the Avoca area.

Australia's principal domestic producer of tungstic oxide is King Island Scheelite Ltd from its mine at Grassy. The company is currently engaged in a \$10m plant expansion programme involving construction of a new treatment plant, power station and mine facilities. In conjunction with the State Government, the company is also constructing a new port at Grassy. On completion of the programme annual ore treatment is expected to reach 600,000 tons.

In 1970-71 the assayed tungstic oxide content of Tasmanian mine production was 1,524 tons; this was 90.0 per cent of the Australian total. Record high world prices were reported during 1970 as good quality tungsten was in short supply in overseas markets.

Sulphur

There are no known deposits of elemental sulphur in Australia, but its use is of vital importance in the heavy chemical and fertiliser industry, the principal form being as sulphuric acid. The sulphur content of the Mt Lyell and Rosebery ores is used to manufacture this acid.

In May 1970, a \$14m sulphuric acid plant was opened at Burnie as a joint venture by Mt Lyell Mining and Railway Company Ltd and Electrolytic Zinc Company (A/asia) Ltd using pyrites railed from the Mt Lyell and Rosebery mines. Sulphuric acid is also produced as a by-product by the Electrolytic Zinc Company (A/asia) Ltd at its Risdon plant. In 1970-71 the assayed sulphur content of Tasmanian mine production was 85,969 tons or 21.5 of the corresponding Australian total. N.S.W. is the principal producing State.

Iron Oxide and Iron Ores

Tasmania has large deposits of iron ore which until recently were used mainly for iron oxide in the local manufacture of cement. The principal Tasmanian deposit at Savage River is held on licence by an Australian company, Industrial and Mining Investigations Pty Ltd. Part of the deposit is leased to American interests who have developed the Savage River mining complex described in detail in the 1968 *Year Book*. Industrial and Mining Investigations Pty Ltd is currently investigating the feasibility of establishing an integrated steel industry based on those parts of the deposit not already leased out.

Investigational work is also being carried out on additional iron ore deposits at Blythe and Hampshire on the North-West Coast. During 1969, the Savage River mine produced 1,962,849 tons of dry concentrate with an assayed iron content of 1,366,397 tons, and produced 1,908,215 tons of pellets with a value of \$24.1m.

Asbestos

Although asbestos is no longer mined in the State, two exploration companies are currently outlining possible commercial deposits. At Noddy Creek, 30 miles south of Strahan, The Broken Hill Proprietary Co. Ltd is investigating a deposit of chrysotile asbestos, while at Anderson Creek, near Beaconsfield Allstate Exploration N.L. has delineated two potentially commercial ore bodies.

MINERAL EXPLORATION

Introduction

The ore bodies in the areas leased to mines may be large but it is inevitable that they will be exhausted at some time in the future; rather than passively wait for this event, owners of operating mines press on with exploration outside the boundaries of their leases, and in this activity they are joined by exploration companies. In Tasmania, there has been concentration on relatively small areas where geological, geochemical and geophysical surveys have indicated favourable conditions for the occurrence of mineral deposits.

Mineral Exploration Areas

At 31 December 1970, 114 exploration and special prospectors' licences were in force in Tasmania covering an area of 15,981 square miles. Many of these licences are held by separate companies which are actively engaged in exploration. Comprehensive lists of the companies searching for minerals or performing developmental work were printed in previous Year Books.

In addition to companies investigating their own leases, several mining groups are engaged in exploration under either options or other arrangements with licence holders and mining lessees.

Interest in mineral exploration in Tasmania has been at a high level in recent years. Companies, which have been engaged in exploration for a considerable time are being restricted to areas where investigations have indicated that a more intensive search is justified. This has released areas for exploration by other companies which in some cases employ new investigation techniques.

Drilling by Mines Department

During 1970 the Mines Department employed its drilling plants in boring tin alluvials in the Gladstone district, lode tin deposits at Waratah, gold reefs in the Alberton and Beaconsfield districts, coal deposits at Mt Nicholas, limestone at Mole Creek and clay at Launceston. Water investigations were undertaken in the Longford and Scottsdale districts. The Department also undertook stratigraphic boring for geological purposes in the Cressy-Longford area and at Glenorchy.

Assistance Provided by Mines Department

The Department of Mines provides financial assistance to mining lessees for the purchase of plant and machinery, for sinking, repairing or de-watering of shafts, for construction of dams and water races, for testing and proving

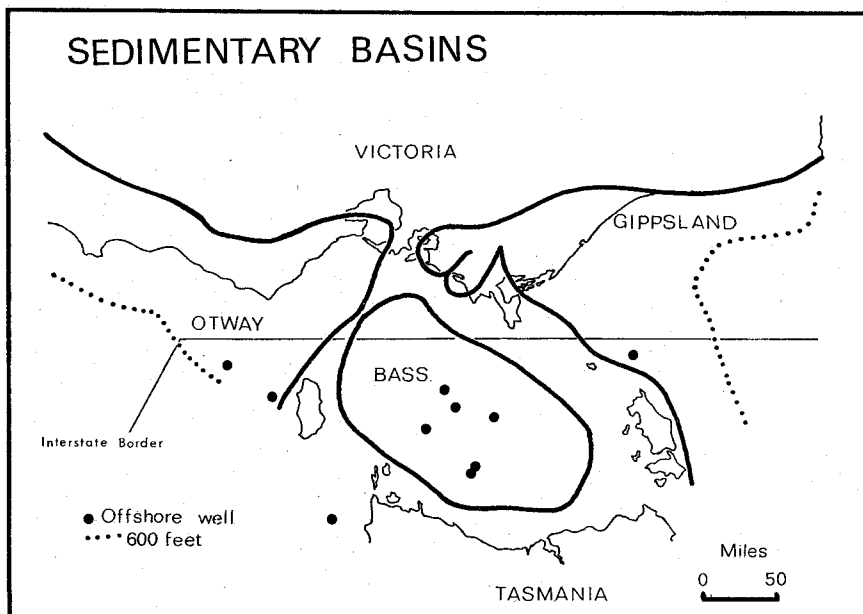
a deposit of any mining product, for developmental work, and for diamond and other types of drilling. The Department has available, for hire, percussion and diamond drills for exploration, as well as complete plant for small shaft sinking and tunnelling. Other assistance is rendered to the industry in the form of geological and engineering advice, through ore-dressing research into metallurgical recoveries, and the selection and design of treatment plant.

PETROLEUM EXPLORATION

General

In Tasmania at the end of December 1970, there were in force three Petroleum Exploration Licences issued under the *Mining Act* 1962 and eleven offshore Exploration Permits issued under the *Petroleum (Submerged Lands) Act* 1967-1968. The Licences covered 639 square miles, including 290 square miles of internal waters. The offshore Exploration Permits covered some 57,310 square miles of the continental shelf and adjacent Tasmanian waters.

The accompanying map shows the major sedimentary basins in south-eastern Australia and the sites of ten offshore wells drilled in Tasmanian waters. Sailfish 1 is excluded because it was drilled at the end of 1971, while Mullet 1 has only recently been transferred to 'Tasmanian waters' being only 200 yards south of the border with Victoria.



During 1969 and 1970, seven offshore exploration wells were drilled in Tasmanian waters by Esso Exploration and Production Aust. Inc. and Hematite Petroleum Pty Ltd—two in the Gippsland Basin area, two in the Otway Basin and three in the Bass Basin. Three wells, Pelican No. 1 and No. 2 and Cormorant No. 1 produced undefined shows of hydrocarbons but as yet no quantities have been made public. These shows, all in the Bass Basin, are encouraging as they are the first to be reported in Tasmanian waters.

In October 1971 New South Wales Oil and Gas N.L. drilled and abandoned the Sailfish 1 prospect north-east of Flinders Island.

There was no onshore drilling during the period 1969 to 1971.

Other petroleum exploration undertaken has included marine seismic surveys in the Cape Pillar area by Amoco Australia Exploration Co. and in the Bass Strait/Tasman Sea area by Magellan Petroleum Australia Ltd and N.S.W. Oil and Gas N.L.; further evaluation of the Sailfish prospect in this area is planned.

Drilling in Tasmanian Waters, 1970 and 1971

Otway Basin

Whelk 1: Drilled in Tasmanian waters fifteen miles west north-west of King Island the wildcat well was spudded-in on 6 March 1970, in 338 feet of water. Using the *Ocean Digger* rig the hole was drilled to a total depth of 4,800 feet without finding any traces of hydrocarbons. It was completed on 17 March 1970, plugged and abandoned as a dry hole.

Bass Basin

Pelican 1: A wildcat well, it was spudded-in on 19 March 1970 in 251 feet of water about fifty miles north of Burnie. The *Ocean Digger* rig drilled the well to a total depth of 10,428 feet. On 7 April 1970, Esso Exploration and Hematite Petroleum announced that small amounts of hydrocarbons had been recovered from thin sandstones during a programme of wireline formation tests below 8,100 feet. On 23 April, the partnership announced that more small shows of hydrocarbons had been encountered during drilling below 8,600 feet, but to determine the significance of the shows would require additional evaluation. The well was completed on 1 May 1970, plugged and abandoned.

Cormorant 1: The wildcat well was spudded-in on 11 June 1970, in 240 feet of water, about sixty miles south-west of Wilsons Promontory. Using the *Ocean Digger* rig the hole was drilled to a total depth of 9,845 feet. On 9 July, Esso Exploration and Hematite Petroleum announced that samples of hydrocarbons were encountered in wireline tests during routine logging. They were not considered to be significant. The well was completed on 27 July and abandoned as a dry hole.

Pelican 2: The Pelican 2 well was drilled as a step-out well. Spudded-in on 28 July 1970, the well was in 240 feet of water about fifty miles north of Burnie. Using the *Ocean Digger* rig the hole was drilled to a total depth of 10,066 feet. On 20 August, Esso Exploration and Hematite Petroleum announced that minor indications of hydrocarbons had been found during drilling and in a routine wireline test. On 3 September, the partnership announced that the hydrocarbon shows in the two Pelican wells would require further evaluation before an assessment of the area could be made. The well was completed on 4 September, plugged and abandoned.

Gippsland Basin

Sailfish 1: On 11 October 1971 the wildcat well was spudded-in in 282 feet of water by the operating company New South Wales Oil and Gas N.L. The well, 37 miles north-east of Flinders Island, is one of fifteen potential targets in the area. Drilled by the *Glomar Conception* rig the target anomaly is a limestone reef at a depth of 6,500 feet. The well intersected volcanic strata and was abandoned at 4,060 feet.

Exploration Statistics

The following tables show details of wells and footages drilled for petroleum exploration and the status of the wells in terms of discoveries.

Petroleum Exploration, Tasmania

Particulars		1966	1967	1968	1969	1970	1971 <i>p</i>
Wells Drilled—Offshore	no.	1	1	1	3	4	1
Onshore	no.	..	4	1	..	..	..
Depth Drilled	feet	6,607	11,881	14,332	9,770	35,139	4,060
Private Expenditure (a) ..	\$'000	1,863	2,893	1,496	1,837	4,708	..

(a) Excludes Commonwealth government exploration subsidy.

Offshore Exploration Drilling in Tasmanian Waters: Summary

Sedimentary Basin	Year	Well	Depth (feet)	Type	Result
Bass	1965	Bass 1	7,717	Exploration	Dry Hole
	1966	Bass 2	5,910	Exploration	Dry Hole
	1967	Bass 3	7,978	Exploration	Dry Hole
	1970	Cormorant 1	9,845	Exploration	Gas Show
	1970	Pelican 1	10,428	Exploration	Gas Show
	1970	Pelican 2	10,066	Step out	Gas Show
Gippsland ..	1969	Bluebone 1	1,984	Exploration	Dry Hole
	1969	Mullet 1	2,463	Exploration	Dry Hole
	1971	Sailfish 1	4,060	Exploration	Dry Hole
Otway	1968	Prawn 1	10,477	Exploration	Dry Hole
	1969	Clam 1	5,323	Exploration	Dry Hole
	1970	Whelk 1	4,800	Exploration	Dry Hole

The above sections were prepared from information made available by the Tasmanian Mines Department, the Petroleum Information Bureau (Australia) and the Ministry of Fuel and Power, Victoria.

STATISTICS OF MINERAL PRODUCTION

Source of Data

Statistics relating to quantities of minerals produced (including assayed metallic content) are, in the main, obtained from the State Mines Department and are supplemented, where necessary, with data obtained from the annual census of mines and quarries conducted by the Bureau of Census and Statistics, and from the Commonwealth Bureau of Mineral Resources.

Other details of the mining industry, such as employment, value of output, and costs of production, etc. are obtained from the annual census of mines and quarries conducted by the Bureau. This census was first conducted in 1952 and the information obtained from each census was basically the same until 1968. As from 1968-69 this sector was one of the five which were used to commence the Integrated Economic Censuses (which are explained fully in Appendix A).

Metallic Minerals

The table that follows shows the quantity of metallic minerals produced in Tasmania for a five-year period:

Metallic Minerals: Production

Mineral	1966	1967	1968	1969	1970
Tons					
Copper—Concentrate	55,981	55,600	54,600	59,940	(a)84,550
Ore	11,112	8,422	5,056	5,754	(a) ..
Precipitate	66	90	123	61	(a) ..
Copper-Tin Concentrate .. ..	..	..	877	3,303	3,763
Iron—Ore .. ..	..	..	708,399	1,962,849	1,917,975
Oxide	2,797	7,866	12,780	11,117	9,457
Lead Concentrate	14,462	13,766	13,352	13,596	12,459
Lead-Copper Concentrate	12,083	12,227	12,558	12,901	11,722
Pyrite Concentrate	61,006	59,714	42,304	28,535	75,338
Rutile Concentrate .. ..	..	..	..	5,239	7,409
Tin Concentrate	1,510	2,352	5,154	8,072	9,077
Tungsten Concentrates—					
Scheelite Concentrate	1,307	1,200	1,460	1,530	1,070
Wolfram Concentrate	497	435	484	601	898
Zinc Concentrate	83,761	81,751	82,458	84,255	77,348
Zircon Concentrate .. ..	..	..	..	6,096	6,075

Ounces					
Gold (not in Concentrates) ..	82	160	118	144	120

(a) Smelting of these items at Mt Lyell has ceased; present operations involve production of copper concentrates (mainly for export).

Assayed Content

In the following table, the various concentrates have been grouped to show their content in terms of individual metals. The contents stated are as determined by assay and include all pay metals and metals which are a refiner's prize; totals compiled on this basis contain no allowances for losses in smelting and refining and therefore, in general, exceed the quantities actually recoverable. The table refers exclusively to minerals mined in Tasmania and excludes minerals imported for smelting and refining:

Assayed Contents of Metallic Minerals Produced

Particulars	1966	1967	1968	1969	1970
COPPER (Tons)					
Copper—Concentrate	14,831	15,243	14,510	16,251	21,927
Ore	563	406	181	86	(a) ..
Precipitate	15	20	26	16	(a) ..
Copper-Tin Concentrate .. ..	..	..	169	570	764
Lead Concentrate	90	74	95	108	92
Lead-Copper Concentrate	1,196	1,250	1,333	1,378	1,290
Zinc Concentrate	310	270	287	276	269
Total	17,005	17,263	16,601	18,685	24,342

Assayed Contents of Metallic Minerals Produced—continued

Particulars	1966	1967	1968	1969	1970
GOLD (Fine Ounces)					
Copper—Concentrate	8,706	8,970	8,837	10,487	13,242
Ore	151	117	48	52	(a) ..
Lead Concentrate	3,339	2,475	3,141	3,821	2,755
Lead-Copper Concentrate	21,430	23,169	21,553	22,908	24,260
Zinc Concentrate	2,802	2,637	2,812	2,846	2,937
Other Sources	79	151	107	132	108
Total	36,507	37,519	36,498	40,246	43,302
IRON (Tons)					
Iron Ore .. ..	..	..	494,525	1,366,397	1,324,802
LEAD (Tons)					
Lead Concentrate	8,447	8,098	7,841	7,911	7,256
Lead-Copper Concentrate	4,497	4,603	4,682	4,580	3,961
Zinc Concentrate	2,634	2,431	2,390	2,415	2,475
Total	15,578	15,132	14,913	14,906	13,692
SILVER ('000 Fine Ounces)					
Copper—Concentrate	60	72	82	79	116
Ore	11	10	4	2	(a) ..
Lead Concentrate	369	344	362	353	331
Lead-Copper Concentrate	1,108	1,114	1,054	1,054	998
Zinc Concentrate	286	259	248	255	271
Total	1,834	1,799	1,749	1,743	1,717
SULPHUR (Tons)					
Lead Concentrate	2,924	2,790	2,678	2,693	2,435
Lead-Copper Concentrate	3,160	3,081	3,260	3,373	3,097
Pyrite Concentrate	29,344	28,827	20,536	13,525	(b) 50,873
Zinc Concentrate	27,368	26,785	26,600	27,109	26,762
Total	62,796	61,483	53,074	46,700	83,167
ZINC (Tons)					
Lead Concentrate	2,500	2,304	1,730	2,442	2,314
Lead-Copper Concentrate	1,391	1,342	1,414	1,445	1,441
Zinc Concentrate	45,960	45,211	45,002	46,207	42,399
Total	49,851	48,857	48,146	50,094	46,154
TIN (Tons)					
Tin Concentrate	1,031	1,529	1,187	4,818	4,939

Assayed Contents of Metallic Minerals Produced—*continued*

Particulars	1966	1967	1968	1969	1970
TUNGSTEN OXIDE (WO₃) (Tons)					
Scheelite Concentrate	941	863	1,056	1,093	760
Wolfram Concentrate	365	320	347	435	648
Total	1,306	1,183	1,403	1,528	1,408
CADMIUM (Tons)					
Zinc Concentrate	75	73	74	76	69
MANGANESE (Tons)					
Zinc Concentrate	254	243	246	254	206
TITANIUM OXIDE (Tons)					
Rutile Concentrate .. ..	..	..	..	4,933	7,026
Zircon Concentrate .. ..	..	..	..	30	20
Total .. ..	..	..	..	4,963	7,046
ZIRCON (Tons)					
Rutile Concentrate .. ..	..	..	..	34	77
Zircon Concentrate .. ..	..	..	..	5,964	5,972
Total .. ..	..	..	..	5,998	6,049

(a) Smelting at Mt Lyell has ceased; present operations involve production of copper concentrate (mainly for export).

(b) Increased concentrate produced in association with sulphuric acid manufacture at Burnie.

Fuel Minerals (Coal)

The only fuel mineral mined in Tasmania is coal; details of production are shown for a five-year period:

Production of Coal in Tasmania
(⁰⁰⁰ Tons)

Description	1966	1967	1968	1969	1970
Coal, Black—					
Semi-anthracite	2	2	2	2	1
Bituminous	80	75	89	126	123
Total	83	77	91	127	124

Non-Metallic (Excluding Fuel) Minerals

The quarrying of limestone is the earliest recorded activity in the field of non-metallic mineral mining in the State, burnt lime being sought as a base for building mortar. Production of this non-metallic mineral has gradually

increased to meet a rising demand in various industrial processes. Large exports of limestone were made in the period 1918-1947, when The B.H.P. Co. Ltd operated quarries at Melrose on the North West coast.

The next table shows the Tasmanian production of non-metallic minerals for a five-year period:

**Non-Metallic (Excluding Fuel) Minerals Production
(Tons)**

Mineral	1966	1967	1968	1969	1970
Clays—					
Brick and Shale	165,546	153,574	160,104	165,129	125,878
Other	72,875	42,208	63,099	72,052	79,302
Dolomite	2,606	2,143	2,534	1,515	3,341
Limestone (a)	344,734	348,449	495,811	550,074	509,193
Peat Moss .. ..	..	..	131	151	139
Ochre	65	97	11	79	41
Pebbles	895	1,237	1,214	1,023	1,642
Silica (b)	5,417	13,016	13,238	27,860	49,601

(a) Excludes quantities used directly as a building or road construction material.

(b) For glass, chemical, etc. manufacturing.

Construction Materials

In addition to the types of mining and quarrying previously described, there is the quarrying of construction materials (for buildings, roads, etc.) such as crushed and broken stone, gravel and sand. This type of activity also is taken into account when placing a value on the output from mines and quarries, measuring their level of employment, etc.

Mining Industry Statistics, Pre-1968-69

In the earlier sections of this chapter, the data on mining and quarrying have been confined to physical production and metallic content by assay, but other measures such as the level of employment, values of output, etc. are also available to cover the period 1952 to 1968. Operations for 1968-69 and subsequent years were covered by new definitions, etc. explained in the next section of the chapter under the heading 'Census of Mining Establishments'. A definition of the field of activity classified as 'Mining and Quarrying' appears as an introduction to the 'Mining' section of this chapter.

The following table gives details of employment in mines and quarries for the five-year period ending 1968 (see next section for later figures):

Employment in Mines and Quarries (a)

Particulars	1964	1965	1966	1967	1968
Number of Mines and Quarries	42	46	51	42	44
Persons Employed (b)—					
Working Proprietors ..	16	20	12	6	7
Salaried Employees—					
Above Ground ..	288	330	469	614	543
Below Ground ..	75	60	77	79	93
Wage Earners—					
Above Ground ..	1,449	1,479	1,693	1,876	1,950
Below Ground ..	683	685	676	727	770
Total Workers ..	2,511	2,574	2,927	3,302	3,363

(a) Mines and quarries employing four or more persons.

(b) On last full working day of year shown.

In addition to the 44 mines and quarries included in the foregoing table, a further 124 mines and quarries, each employing less than four persons, operated in 1968.

The relative insignificance of these small mines and quarries can be judged from the fact that in total they accounted for only seven per cent of the total number of persons employed in all mines and only 3.1 per cent of the total value of output of all mines. The five largest Tasmanian metal mines accounted for 70 per cent of the employment and 84 per cent of the value of output.

Values of Output and Production

Before 1968-69, the following definitions were used in statistics dealing with mining:

Value of Output was defined as the selling value at the mine or quarry (i.e. exclusive of transport costs from mine or quarry to the point of sale). Value added by reduction of ores, concentrates, etc. to metals was excluded.

Value of Production was defined as the selling value at the mine or quarry less the cost of power, fuel and light and the cost of certain materials and stores such as timber, explosives, etc. No allowance was made for depreciation or costs of maintenance.

The next table gives details of value of output, value of production and costs data for mines and quarries employing four or more persons (see next section for later figures):

Mines and Quarries (a): Value of Output; Value of Production; and Costs (\$'000)

Particulars	1964	1965	1966	1967	1968
Value of Output	24,109	27,929	33,504	33,614	43,814
Less Cost of Power, Fuel and Light used	786	785	844	1,069	1,815
Less Other Costs (mainly materials)	5,965	7,801	7,791	8,308	10,436
Value of Production (b) ..	17,358	19,343	24,868	24,238	31,563
Salaries and Wages Paid (c)—					
Salaries	1,264	1,305	1,832	2,723	2,513
Wages (d)	6,819	7,604	8,045	9,126	10,062
Total Salaries and Wages	8,083	8,909	9,877	11,849	12,574

(a) Mines and quarries employing four or more persons.

(b) The cost of labour is *not* deducted in determining the value of production.

(c) Exclusive of drawings by working proprietors.

(d) Net amount after deducting value of explosives sold to own employees.

The previous tables on employment, output, etc. have been restricted to data obtained from mines and quarries employing four or more hands, this size level providing a basis for uniform mining statistics in all Australian States. However, the annual mining census in Tasmania seeks information from all establishments engaged in mining and quarrying including those with less than four persons employed. The following table shows the value of output for all mining and quarrying operations and also the contribution of specific types of activity (see next section for later figures):

All Mines and Quarries: Value of Output
(\$'000)

Particulars	1964	1965	1966	1967	1968
Metal Mining	21,600	25,349	30,187	31,102	41,115
Fuel Mining	649	430	362	322	371
Non-metal (excluding Fuel) Mining (a)	864	744	732	611	690
Total Mining	23,113	26,523	31,281	32,035	42,175
Construction Material Quarrying	1,935	2,475	3,280	2,652	2,783
Total Mining & Quarrying	25,048	28,998	34,561	34,688	44,958

(a) Includes clays, dolomite, silica, limestone, etc.

Smelting and Refining of Metals

The value of output of mining and quarrying is defined as the selling value of the product at the mine or quarry (e.g. in metal mining, usually the selling value of specific concentrates at the mine). Earlier, reference was made to the fact that Tasmanian manufacturing industry includes the extraction and refining of metals, not only from locally produced ores and concentrates, but also from those that have been imported; in actual fact, extraction and refining in Tasmania employ more persons than mining and result in greater values, both of output and of production. The following table is compiled from factory statistics to illustrate this point:

Non-Mining Activity: Extracting and Refining Metals
Values of Output, Production, etc.

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
Factories no.	4	4	4	4	4
Average Workers (a) no.	3,444	3,394	3,404	3,565	3,455
Value of—Output \$'000	66,238	81,336	83,049	91,473	83,374
Production (b) \$'000	24,065	27,185	28,792	36,230	33,137

(a) Average whole year, including working proprietors.

(b) Value of output less recorded costs of manufacture, other than labour.

In the previous table, the principal metals included are: copper (from local ores), zinc and cadmium (from local and imported ores), aluminium (from imported bauxite) and ferro-manganese alloy (from imported ores).

The value of production in the factory table does not duplicate values already recorded in the mining sector since the cost of the basic raw materials—ores or concentrates—is one of the recorded costs of manufacture deducted from the value of output.

The next table gives details of the production of zinc and copper by refinery processes:

Non-Mining Activity: Production of Zinc and Copper
(Tons)

Year	Refined Zinc	Copper (a)	Year	Refined Zinc	Copper (a)
1963-64	138,610	11,790	1966-67	143,917	14,627
1964-65	138,779	12,125	1967-68	129,789	14,062
1965-66	143,911	13,912	1968-69	148,707	14,392

(a) Refined copper to 1964-65; blister copper from 1965-66. In October 1965, the Mt Lyell refinery was closed down and the blister copper was thereafter shipped to Port Kembla (N.S.W.) for refining. In December 1969, the Mt Lyell copper smelters closed down.

Aluminium Production

The refinery for the production of alumina and refined aluminium is situated at Bell Bay on the River Tamar. The choice of Tasmania was determined by the availability of large supplies of relatively cheap hydro-electric power. Production of alumina commenced in February 1955, and of refined aluminium in September 1955. Published statements indicate that the capacity of the plant, in terms of primary aluminium has been lifted steadily in recent years. The commissioning in 1971 of a third potline brought annual capacity to 94,000 tons, nearly eight times the plant's productive capacity in 1961.

CENSUS OF MINING ESTABLISHMENTS, 1968-69

Introduction

As related in the previous section of this chapter, annual censuses of mines were conducted by the Bureau from 1952; the last 'old-style' mining census covered the calendar year 1968. The year 1968-69 was covered by five simultaneous economic censuses, the sectors comprising: (i) mining; (ii) manufacturing; (iii) wholesale trade; (iv) retail trade; and (v) electricity and gas production and distribution.

The integrated economic censuses 1968-69 are fully described in Appendix A in which there also appears an explanation of the factors which made necessary the termination of 'old-style' mining censuses and the start of a new series, based on new reporting unit concepts and new data concepts. In this section, it is intended to give the *preliminary results* of the 1968-69 mining census for Tasmania, to point out differences between the old-style and new-style censuses but not to discuss the reasons for the changes (these are set out in Appendix A).

Definition of Mining Establishment

All Activities at One Location

In all 1968-69 censuses, the basic census unit, in general, covers all the operations carried on under the one ownership at a single physical location. The *mining establishment* is thus one *predominantly* engaged in mining, but the data supplied for it now cover (with a few exceptions) the following activities (where applicable) at the location:

- (a) mining activities, including the dressing or beneficiation of ores or other minerals;
- (b) any activities connected with the selling and distribution of the minerals produced; and
- (c) any non-mining activities (e.g. manufacturing, construction, etc.).

Exceptions to this total coverage rule are made where any secondary or subsidiary activity (in terms of gross value) exceeds \$1m, and such locations are treated, for statistical purposes, as two or more establishments corresponding to the various kinds of activity carried on.

Administrative Offices and Ancillary Units

The mining establishment statistics also include data relating to separately located administrative offices and ancillary units serving the establishment and forming part of the enterprise which owns and operates the establishment. These units, such as head offices, storage premises, etc. were excluded from the 'old-style' mine censuses.

Effects of New Classification

The application of the definition of standardised census units has resulted in the exclusion of a number of units included in earlier mine censuses. Previous censuses covered mining and quarrying activities at a location, irrespective of whether they were the predominant activity. However, from 1968-69, if mining or quarrying is not the predominant activity, the establishment is included in a different census if its major activity is reported in another census sector, or otherwise classified as 'out-of-scope' of all present census sectors. For example, a brickworks mining its own clay is included in the manufacturing census and excluded from the mining census.

The most obvious effect of the change in scope is the reduction in the number of Tasmanian establishments: the number included in the 1968 mining and quarrying census was 168; the number included in the 1968-69 integrated census was only 85. The factors causing this sharp drop can be summarised as follows:

- (i) application of major activity rule as basis for inclusion in the mining census;
- (ii) itinerant and part-time miners have now been omitted because of their limited scale of operations and consequent difficulties in collecting census returns from them.

Most of the reduction in number of establishments was due to factor (ii) but factor (i) had some effect, the most obvious exclusions being clay-mining and limestone quarrying (when these are subsidiary activities in establishments classified under manufacturing) and construction material quarrying (when this is a subsidiary activity of establishments classified under building and construction). It should be noted, however, that the excluded establishments are mainly small ones and that the volume of mining activities accounted for by such establishments is relatively insignificant.

New Data Concepts

The introduction of standardised data items in all census sectors has involved changes in the content of mining statistics. Basic items in the former mining censuses were 'value of output' and 'value of production' (see definitions in the previous section, 'Statistics of Mineral Production'); the new corresponding items in the 1968-69 mining census are 'turnover' and 'value added'. The new items are derived in a different way and while the old 'value of production' is somewhat similar in concept with the new 'value added', the old 'value of output' referred to value at the mine whereas 'turnover' relates to actual sales. The new items are defined below:

Value of Turnover

The value of turnover: *Equals* Sales and transfers out of minerals and other goods produced by the establishment;

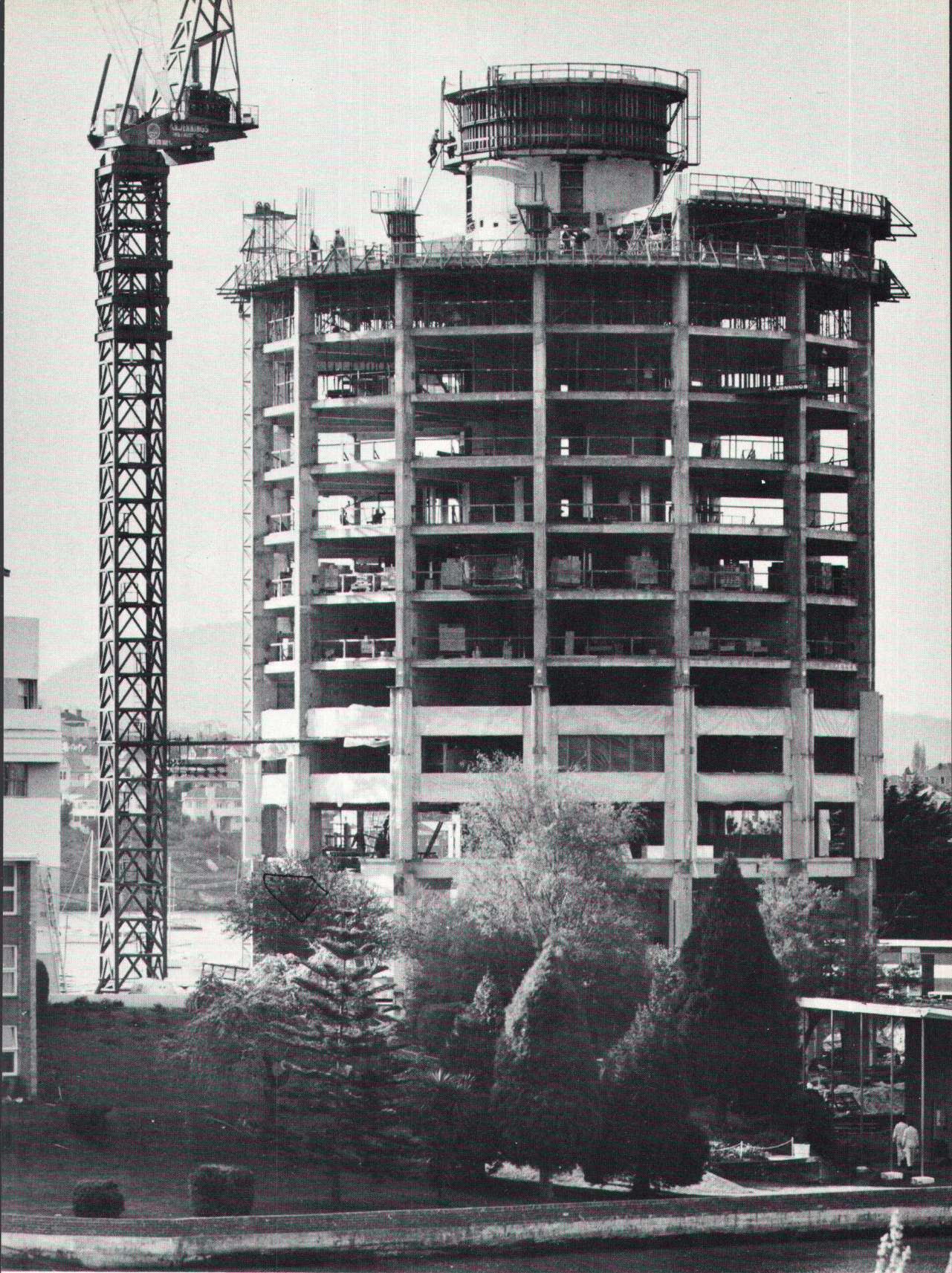
Plus Sales and transfers out of minerals and other goods not produced by the establishment;

Plus Bounties and subsidies on production;

Plus All other operating income;

Plus Capital work done for own use, or for rental or lease.

In the above definition, all other operating income *includes* commission, repair and servicing revenue but *excludes* rents, leasing revenue, interest (other than from hire purchase), royalties and receipts from the sale of fixed tangible assets.



Wrest Point Casino, December 1971

(Vern Reid)

*Cathedral Rock off Cape Pillar
(Dept of Film Production)*



Mt Ida, with Lake St Clair in the foreground

(Keith Antonysen)



Purchases and Selected Expenses

Purchases and Selected Expenses: *Equals* Purchases and transfers in of electricity, fuels, stores and other materials for use in production;

Plus Purchases and transfers in of minerals and other goods for resale;

Plus Charges for commission and sub-contract work;

Plus Repair and maintenance expenses;

Plus Outward freight and cartage, motor vehicle running expenses and sales commission payments.

Value Added

The Value Added: *Equals* value of turnover *plus* increase (or *less* decrease) in stocks *less* purchases and selected expenses.

Value added is the appropriate measure for comparing various industries and can be added for groups of industries without there being any possibility of duplication.

Transfers: In the previous definitions, the terms 'transfers in' and 'transfers out' occur. The transactions refer exclusively to transfers between establishments of the same enterprise.

Preliminary Results, 1968-69

The tables that follow give preliminary results for the 1968-69 mining census. The results are subject to revision because: (i) the detailed industry classification of mining establishments is still to be confirmed; (ii) transfers between establishments may need further adjustment to obtain consistent values; and (iii) two elements have not been taken into the calculation of turnover, namely bounties and subsidies, and capital work done for own use, or for rental or lease. Because of this last fact, the term 'turnover' is not used in the tables, the substitute being 'Sales, transfers out and other operating revenue'.

Non-comparability

Direct comparisons with figures for previous years are not possible because of changes in the census units, the scope of the census and the items of data.

It should be noted, however, that statistics of the value of output at the mine of mineral products will continue to be compiled for all establishments, including those excluded from the mining census.

Census of Mining Establishments, 1968-69
Preliminary Summary of Operations by Industry Sub-Division

Industry Sub-Division	ASIC Code (a)	Establishments Operating During 1968-69	Persons Employed (b)			Wages and Salaries
			Males	Females	Persons	
	no.	no.	no.	no.	no.	\$m
Metallic Minerals ..	11	41	3,527	121	3,648	15.4
Coal	12	3	<i>n. p.</i>	<i>n. p.</i>	<i>n. p.</i>	<i>n. p.</i>
Crude Petroleum, incl. Natural Gas	13	..	..	..	..	..
Construction Materials	14	31	162	3	165	0.5
Other Non-Metallic Minerals ..	15	10	<i>n. p.</i>	<i>n. p.</i>	<i>n. p.</i>	<i>n. p.</i>
Total Mining (c)	..	85	3,810	130	3,940	16.3

Preliminary Summary of Operations by Industry Sub-Division—*continued*

Industry Sub-Division	ASIC Code (a)	Sales, Transfers Out and Other Operating Revenue	Stocks at 30 June		Purchases, Transfers in and Selected Expenses	Value Added
			1968	1969		
		\$m	\$m	\$m	\$m	\$m
Metallic Minerals ..	11	55.6	7.2	8.3	18.4	38.3
Coal ..	12	<i>n.p.</i>	<i>n.p.</i>	<i>n.p.</i>	<i>n.p.</i>	<i>n.p.</i>
Crude Petroleum, incl. Natural Gas	13	..	..	..	..	..
Construction Materials ..	14	2.3	0.2	0.3	1.0	1.4
Other Non-Metallic Minerals ..	15	<i>n.p.</i>	<i>n.p.</i>	<i>n.p.</i>	<i>n.p.</i>	<i>n.p.</i>
Total Mining (c)	..	59.1	7.4	8.6	19.8	40.4

(a) Australian Standard Industrial Classification.

(b) At last pay period in June; includes working proprietors.

(c) Excludes Services to Mining.

FISHERIES

General

The Tasmanian fishery involves about 1,120 licensed fishermen who operate from 553 vessels. The species which comprise the annual catch are not only scale fish but also include elasmobranchs (sharks), molluscs (scallops, oysters, abalone) and crustaceans (rock lobster).

In 1969-70 approximately 6,640 tons of fish, molluscs and crustaceans were harvested. The catch is composed of about 40 types of which five (rock lobster, shark, snoek (barracouta), abalone and salmon) are of major importance (about 96 per cent of the catch).

The State Government exercises control over the taking of fish through the Sea Fisheries Division (saltwater fisheries) and the Inland Fisheries Commission (freshwater fisheries).

Most freshwater fish are caught for sport but two species (eels and whitebait) are caught for sale.

Commercial fishing for whitebait began in 1941 and reached a peak in 1947 when over a million pounds were caught. The canning of whitebait ceased in the early 1950s and the annual catch declined to a few thousand pounds; however, closer supervision of the fishery in recent years has led to increased catches, which in 1969-70 amounted to 98,000 lb.

Rainbow trout are raised commercially on a trout farm at Bridport. There are, of course, rainbow and brown trout in Tasmanian lakes and rivers (introduced as exotic species) but these may only be fished for by licensed sportsmen and may not be sold.

The commercial freshwater fishery for the short-finned eel was established in 1965 and the catch in 1969-70 was 23,000 lb.

Fish Varieties and Species

The following table lists the main Tasmanian commercial fish varieties and species with their code numbers. The code numbers are prepared on behalf of the Commonwealth/State Fisheries Conference by the Fisheries Division of the Department of Primary Industry.

Main Commercial Fish Varieties, Species and Code Numbers

Variety	Species	Code Number	Variety	Species	Code Number
Eels	<i>Anguilla australis</i>	035	Flat-head ..	<i>Neoplatycephalus</i>	615
Whitebait ..	<i>occidentalis</i>	076		<i>fuscus</i>	616
Rainbow Trout	<i>Lovettia sealii</i>	101		<i>N. richardsoni</i>	617
Flounder ..	<i>Salmo gairdnerii</i>	151		<i>N. speculator</i>	621
	<i>Lophonectes gallus</i>			<i>Trudis bassensis</i>	
	<i>Pseudorhombus</i>			<i>Leviprora</i>	
	<i>tenuirastrum</i>	151		<i>laevigata</i>	625
Sole	<i>Paraplagusia</i>		Shark	<i>Mustelus</i>	
	<i>unicolour</i>	151		<i>antarcticus</i>	651
Cod	<i>Physiculus</i>			<i>Galeorhinus</i>	
	<i>barbatus</i>	201		<i>australis</i>	655
Tuna	<i>Thunnus thynnus</i>		Garfish ..	<i>Hemirhamphus</i>	
	<i>maccoyii</i>	301		<i>melanocheir</i>	712
	<i>T. alalunga germo</i>	303	Southern Rock		
	<i>Katsuwonus</i>		Lobster ..	<i>Jasus lalandei</i>	780
	<i>pelamis</i>	315	Oyster ..	<i>Ostrea angasi</i>	831
Mackerel ..	<i>Auxis thazard</i>	334		<i>Crassostrea gigas</i>	832
Barracouta			Scallop ..	<i>Pecten</i>	
(Snock) ..	<i>Leionura atun</i>	335		<i>meridionalis</i>	835
Mullet ..	<i>Mugil cephalus</i>	351		<i>Equichlamys</i>	
	<i>Aldrichetta</i>			<i>bifrons</i>	836
	<i>forsteri</i>	370		<i>Mimachlamys</i>	
Trevally ..	<i>Usacaranx</i>			<i>asperimus</i>	837
	<i>nobilis</i>	401	Abalone ..	<i>Notobaliois ruber</i>	845
Salmon ..	<i>Arripis trutta</i>	490		<i>Schismotis</i>	
Trumpeter ..	<i>Latris lineatus</i>	535		<i>laevigata</i>	846
	<i>Latridopsis</i>				
	<i>forsteri</i>	536			

Fisheries Statistics

Source of Data and Method of Presentation

Statistics presented in this section have been supplied, in the main by the Sea Fisheries Division of the State Department of Agriculture. In the preparation of fisheries production statistics, the quantities are generally in terms of the form in which the catch is taken from the water. For example, the statistics of fish production are in terms of 'estimated live weight' which is calculated from landed weights by using conversion factors for the various species. These conversion factors allow for the fact that the quantities of fish reported are frequently in a gutted, headed and gutted, or otherwise-reduced condition. Crustaceans are reported on a 'whole weight' basis and molluscs (edible) on a 'gross (in-shell) weight' basis.

The actual edible yield varies, depending on types of fish, and methods of preparation. Barracouta yield about 51 per cent of liveweight when filleted, and shark about 60 per cent when headed and gutted. The edible flesh in

molluscs represents only a small portion of the in-shell weight. The conversion factor for scallops is one-fifth, and for abalone two-fifths, e.g. 250 lb of abalone in-shell yield approximately 100 lb of flesh.

The catch is generally defined as that landed in Tasmanian ports, regardless of whether it is caught in Tasmanian waters or not, or whether it is caught by Tasmanian fishermen or not. A quantity of shark and Southern Rock Lobster taken by Victorian-based fishermen in Tasmanian waters, but landed in Victoria, is included in the Victorian catch and excluded from Tasmanian figures, on the basis that the catch influences the Victorian rather than the Tasmanian economy.

Details of production refer only to recorded commercial production. In view of the importance of amateur fishermen in certain types of fishing, details shown cannot be taken as representing the whole catch. In addition, it is likely that the figures shown understate, to some extent, the full commercial catch since no information is available on fish taken for sale by persons not licensed as professional fishermen.

Persons Engaged in Fisheries

In the following table, which gives details collected in the Censuses of 1961 and 1966 (at 30 June), the numbers of persons whose industry was classified to 'fishing and whaling' are shown together with the numbers engaged in all primary industries and in the total work force; Australian and Tasmanian figures are compared:

Australia and Tasmania: Persons Engaged in Fisheries
Population Censuses, 1961 and 1966

Particulars	Australia		Tasmania	
	1961	1966	1961	1966
Persons engaged in—				
Fishing and whaling '000	8.3	8.0	0.6	0.6
All primary industries '000	513.3	456.7	20.8	17.2
Total work force '000	4,225.1	4,856.4	130.9	147.3
Persons engaged in fishing and whaling as a proportion of—				
All primary industries per cent	1.6	1.8	2.8	3.4
Total work force per cent	0.2	0.2	0.4	0.4

Employment, Boats

Persons Engaged and Boats

The following table shows details of persons and boats employed in the taking of fish, crustaceans and edible molluscs. The data are derived from boat registration records of the State Sea Fisheries Division. The term 'number of crew' refers to the usual number of crew on registered fishing vessels and lacks the precision of the concept 'average number employed' used in statistics of other production sectors. Many of the fishermen operate part-time only, and may normally follow other occupations:

Fisheries: Number and Value of Boats, Number of Crew, etc.

Length of Boat (feet)	1968			1969		
	Boats		Crew	Boats		Crew
	Number	Value	Number	Number	Value	Number
		\$'000			\$'000	
Under 20	99	131	174	87	164	140
20 and under 30 ..	119	383	173	113	350	162
30 and under 40 ..	140	1,032	261	139	1,084	265
40 and under 50 ..	131	1,886	304	138	2,121	324
50 and under 60 ..	63	1,531	193	62	1,635	182
60 and under 70 ..	7	217	24	7	289	21
70 and under 85 ..	4	188	16	4	198	14
85 and over ..	3	110	15	3	110	15
Total	566	5,478	1,160	553	5,951	1,123

The boats used for the estuarine fisheries are mostly small vessels, propelled by diesel or petrol motors of low power. The offshore vessels range in length from 30 feet to 100 feet and almost invariably are powered by diesel engines. Refrigeration of the catch at sea is becoming more common, the four main types being ice box, ice cooling, brine tanks and dry refrigeration; almost all boats have wells or deck tanks which serve to keep the catch alive, e.g. crayfish or abalone.

The next table indicates the high proportion of relatively new boats now operating in the fishing industry and analyses the 553 boats according to age:

Number of Boats Classified According to Length and Age, 1969

Length of Boat (feet)	When Constructed						
	Before 1930	1930 to 1939	1940 to 1949	1950 to 1954	1955 to 1959	1960 to 1964	1965 to 1969
Under 20 .. ..	..	1	7	5	11	11	52
20 and under 30 ..	4	4	29	25	15	21	15
30 and under 40 ..	16	15	21	18	20	27	22
40 and under 50 ..	16	6	28	8	12	19	49
50 and under 60 ..	4	4	12	3	6	13	20
60 and under 70 ..	..	1	1	..	1	1	3
70 and under 85 ..	2	..	..	..	1	1	..
85 and over ..	2	..	1	..	..	..	..
Total	44	31	99	59	66	93	161

Production

Fish Catch

The following table shows the production of the main types of fish caught in Tasmania for a five-year period. The fish types appear in the table without any further description to identify the particular species but a specification of the commoner types appears as an introduction to this section.

Fish: Production by Type
('000 lb Estimated Live Weight) (a)

Type	1965-66	1966-67	1967-68	1968-69	1969-70
Mullet	34	32	20	48	31
Tuna	67	32	77	43	11
Shark	1,088	1,003	1,510	2,088	1,767
Australian Salmon ..	432	942	757	383	148
Flathead	74	119	101	64	24
Barracouta (Snook)	3,003	2,286	3,581	3,089	3,480
Whitebait	71	95	56	82	98
Cod	20	15	10	12	22
Flounder	28	29	29	41	39
Trevally	21	9	8	14	22
Trumpeter	34	52	33	39	43
Garfish	46	13	26	28	51
Other	73	199	301	178	142
Total	4,989	4,826	6,509	6,108	5,878

(a) Estimated live weights are calculated from landed weights by conversion factors since quantities of fish are reported frequently in a gutted, headed and gutted, or otherwise reduced condition (e.g. barracouta and shark).

Crustaceans and Molluscs

In terms of value, the most important item in the Tasmanian catch is rock lobster and the next table shows details of production of this crustacean and also of molluscs:

Crustaceans and Molluscs: Production by Type

Type	1965-66	1966-67	1967-68	1968-69	1969-70
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CRUSTACEANS ('000 lb Whole Weight)

Rock Lobster ..	3,939	4,290	3,862	3,747	3,065
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MOLLUSCS ('000 lb In-shell Weight)

Oysters	n.p.	39	69
Scallops	868	753	496	276	111
Abalone	1,600	4,407	6,142	4,648	5,749
Total	2,468	5,160	n.p.	4,963	5,930

Comparison with other States

Rock Lobster: In 1969-70, Tasmania ranked third as a producer of rock lobster, the two leading States being W.A. with 61 per cent of the Australian total and S.A. with eighteen per cent; the Tasmanian catch was twelve per cent of the total.

Abalone: The comparatively new Tasmanian abalone fishery in 1969-70 accounted for almost 41 per cent of Australian production of 14,105,000 lb (in the shell) of abalone. Victoria and South Australia ranked second and third with 38 per cent and seventeen per cent respectively.

Scallops: For many years Tasmania was the only State of the Commonwealth with a commercial scallop fishery; in 1955-56 Tasmania was joined by Queensland, but continued to retain its dominant position in the industry. In 1963, however, Tasmanian fishermen started a Victorian fishery in beds known to exist in Port Phillip Bay and the new site in its first year (1963-64) produced more than twice the quantity of the Tasmanian fishery. Tasmanian production in 1969-70 was just under one per cent of the Australian total, the proportions for other States being—Queensland 43 per cent, Victoria 33 per cent and Western Australia 23 per cent.

Catch Landed at Fishing Ports

Distribution of Fish Landed

The table that follows shows the proportion of fish and rock lobster landed at Tasmanian fishing ports. The information relates to port of landing only, and not to the area in which the catch was made.

**Proportion of Total Fish and Rock Lobster Landed at Each Port, 1969-70
(Per Cent)**

Port	Fish	Rock Lobster	Port	Fish	Rock Lobster
Derwent & Channel			Bass Strait & Islands		
Dover	4.9	3.7	Bridport	6.6	3.9
Gordon .. ..	..	..	Currie	0.3	2.9
Hobart	6.8	6.5	Lady Barron ..	1.9	10.4
Kettering ..	24.7	2.3	Port Sorell ..	2.9	0.5
Margate	10.2	6.1	Smithton .. ..	..	2.6
Southport ..	0.4	1.1	Stanley	5.3	10.8
Woodbridge ..	..	..	'Tamar' (a) ..	0.5	0.2
			Wynyard	1.6	0.1
Total ..	47.0	19.7	Total ..	19.1	31.4
East Coast & Peninsula—			West Coast—		
Bicheno	3.9	5.8	Strahan	1.8	14.1
Coles Bay ..	1.6	0.2			
St Helens ..	2.0	14.3			
Triabunna ..	8.9	8.0			
Dunalley ..	8.4	4.5			
Port Arthur ..	7.3	2.0			
Total ..	32.1	34.8	Total Tasmania ..	100.0	100.0

(a) Launceston, Beauty Point and other Tamar ports.

The next table shows the proportion of the total rock lobster catch landed each month:

**Proportion of Rock Lobster Landed in Each Month
(Per Cent)**

Month	1969	1970	Month	1969	1970
January	19.0	17.2	July	4.6	3.9
February	17.8	12.3	August	3.4	3.5
March	12.7	9.7	September (a) ..	0.5	1.6
April	4.5	3.6	October (a) ..	0.4	0.9
May	2.4	2.3	November	17.5	26.0
June	4.8	3.3	December	12.4	15.7

(a) Closed season in most waters during these months.

Value of Production—Fishing

The table that follows gives details of gross and local values of edible fisheries products. The following definitions apply:

Gross Value of Production is the value placed on recorded production at the wholesale price realised at the principal markets.

Local Value (i.e. recorded production valued at the place of production) is ascertained by deducting marketing costs from the gross value. Marketing costs include freight, cost of containers, commission, and other charges incidental thereto.

Fisheries: Gross and Local Value of Production
(\$'000)

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
Gross Value of Production—					
Fish (a)	491	514	610	676	648
Crustaceans (Rock Lobster)	2,557	2,426	2,776	3,474	2,437
Molluscs (b)	252	714	1,087	714	958
Total	3,300	3,653	4,473	4,864	4,043
Less Marketing Costs	552	630	805	764	700
Local Value of Production	2,747	3,024	3,668	4,100	3,343

(a) Includes value of seaweed harvested for production of alginate.

(b) Value of oysters included with fish until 1966-67 for confidentiality reasons; included with molluscs thereafter.

In other production sectors, local value is further reduced by deducting the value of materials used to arrive at the net value of production. For the fishing sector, this is not possible since data on materials used in the course of production are not available. (Petrol and diesel fuel are examples of such materials.)

Marketing

In general terms, it can be said that production of fish, crustaceans and molluscs from the Tasmanian fisheries far exceeds the demand generated by the relatively small State population; it follows, therefore, that the industry is largely dependent on its ability to find export markets, both interstate and overseas, and this raises the problem of preserving a perishable product. In the past, shark and snoek (barracouta) when caught in large quantities, were sold to orchardists as manure simply because there was no other way of disposing of the surplus. The lifting of an export ban on frozen barracouta is expected to result in a substantial amount being sold to Japan. Cold storage facilities are now generally available and in addition, canneries offer an alternative method of preservation, the principal cannery being located at Margate in the south. The problem of preservation has three aspects: (i) at sea; (ii) on shore; and (iii) in transit to market. Of the 553 registered fishing boats in 1969, 138 boats (i.e. 25 per cent) had refrigeration plant of various kinds. In addition, some catches, e.g. Southern Rock Lobster, can be kept alive in boat wells. Cold storage facilities ashore serve to hold the catch before its despatch to interstate and overseas markets while actual exports are carried by air, by refrigerated trailer on the roll-on roll-off ferries and in the refrigeration chambers of conventional ships.

Marketing is usually undertaken through fish processors and canners. Exporters and fishermen selling directly to consumers contribute a lesser proportion of the total than by the former method.

The following table shows the value of exports and imports of fishery products. The fact that Tasmania has an exportable surplus, yet nevertheless imports some fishery products, is chiefly due to differences in type; the imported varieties include canned sardines, anchovies, oysters, crabs, etc., together with frozen, salted or smoked varieties of European, New Zealand or South African origin. Tasmania has nine fish processors registered as exporters.

**Fishery Products: Value of Exports and Imports
(\$'000)**

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
EXPORTS					
Fish (a)—Overseas .. ..	..	1	5	4	13
Interstate	408	486	491	559	481
Rock Lobster—Overseas	922	584	571	974	1,071
Interstate	1,235	1,103	922	1,191	1,048
Molluscs—Overseas	101	214	588	594	751
Interstate	21	128	130	190	197
All Types—Overseas	1,023	799	1,164	1,572	1,835
Interstate	1,664	1,717	1,544	1,940	1,726
Total	2,687	2,516	2,708	3,512	3,561
IMPORTS					
Fish—					
Fresh and Frozen—Overseas	196	176	136	174	140
Interstate	68	84	105	114	78
Preserved in Tins—Overseas	164	110	138	115	125
Interstate	308	364	242	50	36
Other (b)—Overseas	32	1	6	12	11
Interstate	6	11	7	8	2
All Types—Overseas	392	287	280	301	276
Interstate	382	459	354	172	116
Total	774	746	634	473	392

(a) Includes fresh and frozen fish and fish preserved in tins.

(b) Includes smoked, salted and potted fish, extracts and caviare.

Sea Fisheries Division (Department of Agriculture)

Administration

The Division of Sea Fisheries comes under the responsibility of the Minister for Housing and Fisheries, although for the purposes of administration the Division is under the control of the Director of Agriculture.

Under the *Fisheries Act* 1959, provision is made for a Sea Fisheries Advisory Board to advise the Minister on fisheries except in respect of salmon-trout, eels and whitebait which come under the control of the Inland Fisheries Commission. The Board consists of nine members appointed by the Governor as follows: the Director of Agriculture (or his representative); the Commissioner of Police (or his representative); a representative of Societies interested in the

science of Zoology; two representatives of processors; and four representatives of professional fishermen. Matters discussed by the Board during 1970-71 included lobster, scallop and abalone fisheries, finance for fishermen, regulations and constitution of the Board.

Fisheries Control

Patrol and inspection duties are carried out by Division officers throughout the State. As well as Tasmanian fisheries, certain Commonwealth waters and the Tasmanian section of the continental shelf are patrolled in addition to the enforcement of the provisions of the Australia-Japan Fishing Agreement. For these purposes, the Division owns five high-powered patrol vessels and two four-wheel drive vehicles and, when necessary, makes use of aircraft. In 1970-71, 58 offences were reported of which 52 cases went before the courts, resulting in total fines of \$3,077.

Regular inspections are made of the freezer holds of Japanese fishing vessels for the purpose of noting such details as fish species, size of catch, equipment, etc.

Research

The Division has undertaken numerous research projects, basic aims of which have been to increase the efficiency of the Tasmanian fishing industry and to develop adequate conservation measures for various species of fish. Some of the more recent projects are described in the 1971 *Year Book*.

VALUE OF PRODUCTION PRIMARY AND SECONDARY INDUSTRIES

Introduction

The value of production for Tasmania and the other Australian States was computed in accordance with the decisions reached at the Conferences of Australian Statisticians, and principally at the Conference held in 1935. The values shown in the tables that follow refer only to the production of primary industries and factories and exclude the building and construction industry, those industrial establishments not classified as factories, and certain agricultural and farmyard operations on areas of less than one acre.

New Value Concepts

The value series allowing comparison of primary and secondary industries ends at 1967-68. For 1968-69 and 1969-70, new value concepts were introduced in the mining and manufacturing sectors (see Appendix A for description of Integrated Economic Censuses); the new value concepts, while analogous to those described in the following section, are nevertheless sufficiently different to prevent comparisons being made for years later than 1967-68.

Primary Industries

The following primary industries are those for which data are separately compiled in the value of production tables:

Primary, Rural

Agriculture
Pastoral
Dairying
Poultry
Bee-farming

Primary, Non-Rural

Hunting
Forestry
Fishing
Mining and Quarrying

New value concepts were introduced into mining and quarrying statistics from 1968-69 and comparison of this industry with other primary industries cannot be made for 1968-69 and following years.

In respect of these primary industries, the following uniform definitions are employed:

- (i) *Gross Value of Production* is the value placed on recorded production at the wholesale prices realised at the principal markets. In cases where primary products are consumed at the place of production, or where they become raw material for a secondary industry, these points of consumption are presumed to be the principal markets. Subsidies and bounties paid by the State and Commonwealth Governments to primary industries are, in general, included in gross value of production.
- (ii) *Local Value* (i.e. recorded production valued at the place of production) is ascertained by deducting marketing costs from the gross value. Marketing costs include freight, cost of containers, commission and other charges incidental thereto.
- (iii) *Net Value of Production* represents local values less value of materials used in the process of production. Materials used in the process of production include seed, power, petrol and oils, feed consumed by farm stock, manures, dips, sprays and other costs of a similar nature. No deductions from local values have been made for depreciation, certain maintenance charges, wages, interest, or some other costs normally incurred.

Secondary Industries (Factories)

New value concepts were introduced into manufacturing statistics from 1968-69 and comparison of secondary industries with primary industries cannot be made for 1968-69 and following years.

To place a value upon the production of factories, the following definitions were employed:

- (i) *Value of Output* was the value of goods manufactured and included the amount received for repair work, work done on commission, etc. The basis was the selling value *at the factory*, exclusive of all delivery charges.
- (ii) *Value of Production* was the value of output less the value (at the factory) of the materials used, containers and packing, power, fuel and light used, tools replaced, and materials used in repairs to plant (but not depreciation charges), insurance, pay-roll tax, income tax, advertising, interest on borrowed money, bad debts and other sundry charges.

In examining values for primary and secondary production before 1968-69, it will be seen that *gross value of production* is a concept confined to primary industries; that *local value* for primary industries is broadly analogous in concept with *value of output* for factories; that *net value of production* for primary industries is comparable with *value of production* for factories, since both are derived by deducting the value of materials used in the process of production, a procedure which eliminates possible duplication of values.

Comparing or Combining Industries

In comparing or combining production values for any of the previous industries, it is logically necessary to use only *net value of production* (primary) and *value of production* (secondary); both *gross* and *local* values will be found unsatisfactory because some degree of duplication will be involved. An obvious example of duplication can occur when the raw material for a factory process is the final product of a farm (e.g. the value of hops is contained in the *gross value of agriculture* and also in the *value of output of factories*, specifically of breweries). The primary-secondary relationship not only involves primary products becoming raw materials for factories but also factory products, (e.g. fertilisers) becoming essential materials for primary industries. Less obvious, perhaps, is the fact that one rural industry may supply the 'raw material' for another rural industry (e.g. hay from *agriculture* consumed by livestock in the *pastoral* and *dairying* industries).

In the following chapter, *gross* and *local* values are shown for the various primary industries; the basic reason for publication is not to facilitate comparison and combination of these values for individual industries, or groups of industries, but rather to show how *net value of production* is computed.

In accordance with the previous definitions, net value of production for primary industries is computed by deducting the cost of materials used in the process of production from the local value. Details of such costs are not available for: (i) bee-farming; (ii) hunting; (iii) forestry; and (iv) fishing. In the case of these industries, only local value can be computed.

Sources of Information—Value of Production

Primary Production, Rural

The data used are those concerning quantity of primary production (supplied principally by farmers, etc.) together with information collected from various sources on prices realised in the principal markets for different products, the costs of marketing these products and the costs of certain materials used in their production. Price and cost data are obtained from statutory authorities, (e.g. Dairy Produce Equalisation Committee), market reports, special returns collected from wholesalers, brokers, auctioneers, etc., and from overseas and interstate trade statistics.

Primary Production, Non-Rural

(i) *Hunting*—Principal data are derived from export of skins and information on the annual mutton bird catch.

(ii) *Forestry*—Principal value data are available from the annual factory census, since forestry products are the basic raw material for sawmills, newsprint and paper mills, etc.

(iii) *Fishing*—Quantity data are supplied by fishermen and prices are collected from fish wholesalers and agents.

(iv) *Mining and Quarrying*—Principal value data are supplied by mine operators in the annual mining census.

Secondary Production

Factories—Both quantity and value data are supplied by factories in the annual factory census. Further details will be found in Chapter 8, 'Manufacturing, Electricity and Gas'.

Period Covered

Secondary: Year ended 30 June.

Primary, Rural: Generally the year ended 30 June but includes current season's production harvested after 30 June, e.g. potatoes.

Primary, Non-Rural: For mining and quarrying a year ended 31 December up to 1968 then a year ended 30 June from 1968-69; other industries year ended 30 June.

GROSS VALUE OF PRODUCTION**Rural Industries**

Rural industries, for value of production purposes, comprise: (i) agriculture; (ii) pastoral; (iii) dairying; (iv) poultry; and (v) bee-farming. These industries have no relation, however, to any classification of individual rural holdings on an industry basis; a single holding would, in fact, usually produce several products, some attributable to one and some to another such industry (e.g. wheat and oats which would be counted in agriculture, wool in pastoral and milk in dairying). The industries represent merely a convenient grouping of the aggregate production of individual products.

Agriculture

The importance, in terms of gross value, of two crops, hay and turnips (swede and white), which jointly account for approximately eighteen per cent of the total gross value of agriculture, emphasises the significance of livestock to the rural industries.

The following table shows gross values, for a five-year period, of the groups of crops which comprise the agricultural industry:

Gross Value of Production: Agriculture
(£'000)

Crop	1965-66	1966-67	1967-68	1968-69	1969-70
Cereals for Grain	1,965	2,497	2,789	2,115	2,142
Hay	3,991	7,145	6,391	7,850	4,217
Green Feed	963	1,202	1,165	1,663	1,018
Field Peas	408	443	354	366	470
Other Stock Feed	4,787	4,831	5,651	4,324	3,049
Grass Seed	95	147	112	246	178
Industrial Crops	2,191	1,581	2,316	2,688	2,152
Vegetables for Human Consumption	6,747	9,390	9,461	8,128	9,723
Orchard Fruit	17,874	16,091	17,825	15,751	17,071
Small Fruit	749	797	790	912	881
Other Crops	752	803	456	555	921
Total	40,523	44,925	47,309	44,599	41,824

The next table shows quantity and value details for the main items comprising the agricultural industry. Also included in the table is the average value per unit.

Gross Value of Production: Agriculture, 1969-70

Crop	Unit of Quantity	Production	Gross Value	
			Per Unit	Total
Cereals for Grain—			\$	\$'000
Barley	bushels	1,095,427	1.19	1,305
Oats	bushels	454,937	0.80	365
Wheat	bushels	352,651	1.34	471
Total Cereals for Grain .. ..	..	..	..	(a) 2,142
Hay	tons	361,537	11.67	4,217
Green Feed .. .. .	..	..	..	1,018
Field Peas and Beans—				
Blue Peas	bushels	118,477	2.51	297
Grey and Other Field Peas	bushels	56,510	2.80	158
Horse Beans	bushels	3,470	4.35	15
Total Field Peas and Beans ..	..	..	..	470
Other Stock Feed—				
Turnips (Swede and White) .. ..	..	n.a.	n.a.	3,041
Other .. .. .	..	..	..	8
Total Other Stock Feed .. ..	..	..	..	(a) 3,049
Grass Seed—				
Clover	cwt	884	48.00	42
Other	cwt	7,996	16.98	136
Total Grass Seed	cwt	8,880	20.07	178
Industrial Crops—				
Hops (Dry Weight)	'000 lb	2,796	766.44	2,143
Mustard	'000 lb	81	114.88	9
Total Industrial Crops .. ..	..	..	..	2,152
Vegetables for Human Consumption—				
Beans, French and Runner	'000 lb	11,232	60.31	677
Peas, Green (Ex-shell)	'000 lb	66,138	45.12	2,984
Potatoes	tons	66,921	46.29	3,098
Turnips	tons	3,427	99.89	342
Total Vegetables for Human Consumption .. ..	..	..	..	(a) 9,723
Orchard Fruit—				
Apples	bushels	7,400,000	2.10	(b) 15,532
Apricots	bushels	28,000	3.83	107
Pears	bushels	496,000	2.78	(b) 1,378
Total Orchard Fruit .. .. .	..	..	..	(a) 17,071
Small Fruit—				
Currants	'000 lb	2,063	140.40	290
Loganberries	'000 lb	446	147.16	66
Raspberries	'000 lb	2,812	150.57	423
Total Small Fruit .. .. .	..	..	..	(a) 881
All Other Crops .. .. .	..	..	..	921
Total Crops .. .. .	..	..	..	41,824

(a) Includes other crops not specified in table.

(b) Includes Government devaluation compensation paid to exporters of apples (\$2,155,905) and pears (\$442,979).

Average Unit Gross Values

In the next table, average unit gross values for the principal crops are shown for a five-year period. The unit values have been calculated for the principal agricultural products by dividing the total quantity produced into the total gross value of production for each unit. They therefore represent weighted average 'prices' of the product in all markets (including the farm itself where quantities are retained for farm use) and indicate trends rather than prices actually paid to farmers.

Average Unit Gross Value of Principal Crops

(\$)

Crop	Unit of Quantity	1965-66	1966-67	1967-68	1968-69	1969-70
Cereals for Grain—						
Barley	bush	1.31	1.44	1.49	1.29	1.19
Oats	bush	0.82	0.88	1.00	0.87	0.80
Rye	bush	2.04	1.60	1.60	1.50	1.45
Wheat	bush	1.38	1.43	1.46	1.14	1.34
Hay	ton	15.52	16.35	20.68	15.88	11.67
Field Peas and Beans—						
Blue Peas	bush	2.59	2.96	2.58	2.61	2.51
Grey and Other Peas	bush	2.54	2.16	3.14	2.87	2.80
Horse Beans	bush	3.90	3.14	3.20	3.76	4.35
Grass Seed—						
Clover	cwt	45.22	39.87	46.29	43.65	48.00
Other	cwt	15.29	10.97	18.83	15.94	16.98
Industrial Crops—						
Hops (dry weight)	lb	0.71	0.75	0.77	0.77	0.77
Mustard	lb	0.14	0.10	0.11	0.11	0.11
Vegetables for Human Consumption—						
Beans, French and Runner	'000 lb	69.95	70.94	69.72	53.71	60.31
Peas, Green (Ex-shell)	'000 lb	43.75	48.91	53.14	50.41	45.12
Potatoes	ton	37.39	54.56	48.30	29.38	46.29
Turnips	ton	76.41	85.57	85.66	93.15	99.89
Orchard Fruit—						
Apples	bush	1.91	2.37	2.10	2.03	2.10
Apricots	bush	2.83	3.60	3.23	3.44	3.83
Cherries	bush	5.77	6.51	7.33	6.92	6.95
Nectarines	bush	3.57	5.78	4.60	5.22	6.00
Peaches	bush	2.39	4.38	5.03	5.25	6.10
Pears	bush	1.38	2.42	2.08	2.54	2.78
Plums and Prunes	bush	1.49	1.62	1.49	1.79	1.66
Quinces	bush	1.20	1.20	0.90	1.06	1.18
Small Fruit—						
Blackberries	lb	0.09	0.09	0.12	0.12	0.13
Currants	lb	0.09	0.11	0.13	0.13	0.14
Gooseberries	lb	0.04	0.05	0.06	0.06	0.07
Loganberries	lb	0.08	0.10	0.13	0.13	0.15
Raspberries	lb	0.10	0.11	0.14	0.15	0.15
Strawberries	lb	0.19	0.18	0.23	0.23	0.29

Pastoral, Dairying, Poultry and Bee-farming

For value of production purposes, the pastoral industry is taken to comprise the three products—wool (including wool on skins), cattle (other than culled dairy cows and bobby calves) slaughtered, and sheep and lambs slaughtered. ('Bobby' calves are calves sold as soon as practicable after birth.) Dairying is taken to comprise the three products—milk, dairy cattle (culled cows and bobby calves) slaughtered, and pigs slaughtered. Poultry comprises poultry slaughtered and eggs, and bee-farming consists of honey and bees-wax produced.

The prime source of data on livestock slaughtered is information supplied by slaughtering establishments, supplemented by farmers' annual census returns giving details of slaughtering on farms. As sufficiently detailed information is not available on the types of cattle slaughtered to enable a precise dissection of total slaughterings to be made between the pastoral and dairying industries, data on the known culling rate in dairy herds are also used for this purpose.

The table that follows gives details of the gross value of production for each of the products of these industries:

Gross Value of Production: Pastoral, Dairying, Poultry and Bee-farming
(\$'000)

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
Pastoral—					
Shorn Wool (including Crutchings)	20,399	19,393	14,498	19,713	16,827
Other Wool (a)	2,006	1,590	1,111	1,467	1,253
Sheep and Lambs Slaughtered (b) (c)	6,382	6,418	5,396	5,852	6,464
Cattle Slaughtered (b) (d)	8,563	10,139	9,816	12,086	13,987
Total	37,350	37,540	30,821	39,117	38,532
Dairying—					
Milk	19,100	19,956	19,828	21,473	21,307
Cattle Slaughtered (d)	1,854	1,977	2,017	1,917	2,524
Pigs Slaughtered (b)	4,490	4,833	5,018	4,324	4,943
Total	25,445	26,766	26,862	27,713	28,774
Poultry—					
Eggs	3,724	4,270	4,229	4,854	4,652
Poultry Slaughtered	690	814	914	1,040	913
Total	4,414	5,083	5,143	5,894	5,566
Bee-farming—					
Honey	86	50	118	97	120
Beeswax	7	3	5	5	7
Total	92	53	123	102	127

(a) Dead, fellmongered and wool exported on skins.

(b) Includes adjustment for net exports of livestock.

(c) Excludes value of wool on skins.

(d) Culled dairy cows and bobby calves slaughtered are allocated to dairying; all other cattle slaughtered to pastoral.

The next table shows the average unit gross value of livestock (other than calves) slaughtered:

Average Unit Gross Value of Livestock Slaughtered (a)
(£)

Livestock	1965-66	1966-67	1967-68	1968-69	1969-70
Cattle (other than Calves) ..	88.86	91.51	87.84	90.32	101.20
Sheep	5.73	5.40	3.57	3.52	3.76
Lambs	7.92	7.39	7.16	5.75	5.72
Pigs	30.41	32.11	34.77	30.70	30.74

(a) Valued 'on the hoof'.

Primary Industries

The following table brings together gross values of production for all primary industries for a five-year period:

Gross Value of Production: Primary Industries
(\$ million)

Industry	1965-66	1966-67	1967-68	1968-69	1969-70
Agriculture	40.5	44.9	47.3	44.6	41.8
Pastoral	37.4	37.5	30.8	39.1	38.5
Dairying	25.4	26.8	26.9	27.7	28.8
Poultry	4.4	5.1	5.1	5.9	5.6
Bee-farming	0.1	0.1	0.1	0.1	0.1
Total Rural.. .. .	107.8	114.4	110.3	117.4	114.8
Hunting	0.4	0.5	0.5	0.4	0.3
Forestry	16.0	16.6	r 15.5	15.9	18.9
Fishing	3.3	3.7	r 4.5	4.9	4.0
Mining and Quarrying ..	32.8	39.3	38.7	(a)	(a)
Total Non-Rural	52.5	60.1	r 59.2	..	..
Total Primary	160.3	174.5	r 169.5	..	..

(a) See introduction to section headed 'New Value Concepts'.

NET VALUE OF PRODUCTION—ALL RECORDED INDUSTRIES

Definition

In the preliminary section dealing with definitions, it was emphasised that *gross values of production* are unsuitable for making comparisons or for combining individual industries or groups of industries. In fact, it is impossible to make a comparison between gross value of production for primary industries and for factories, since gross value of production is not collected for factories; the primary-secondary comparison (or combination) can only be made on the basis of *net value of production* (primary industries) and *value of production* (factories).

Net Value, 1969-70

The next table shows, in detail, the method whereby gross values (primary industries) are reduced to local values and then further reduced to net values:

Value of Production: All Primary Industries, 1969-70
(\$ million)

Industry	Gross Value of Production (Value at Principal Market)	Less Marketing Costs	Local Value, (i.e. Production Valued at Place of Production)	Less Cost of Materials, Fuel, etc. Used	Net Value of Production
PRIMARY INDUSTRIES					
Rural—					
Agriculture ..	41.8	10.6	31.3	6.5	24.7
Pastoral ..	38.5	2.9	35.6	11.4	24.2
Dairying ..	28.8	1.5	27.3	4.9	22.4
Poultry ..	5.6	0.1	5.5	2.8	2.7
Bee-farming (a) ..	0.1	..	0.1	n.a.	0.1
Total Rural ..	114.8	15.1	99.7	25.6	74.2
Non-Rural—					
Hunting (a) ..	0.3	..	0.3	n.a.	0.3
Forestry (a) ..	18.9	2.8	16.1	n.a.	16.1
Fishing (a) ..	4.0	0.7	3.3	n.a.	3.3
Mining & Quarrying ..	(b)	(b)	(b)	(b)	(b)
Total Non-Rural ..	..	..	..	..	..
Total Primary ..	..	..	..	..	..

Note: Reference is made to value definitions in the introduction to this section.

(a) Gross and local values available, but production costs not available.

(b) See introduction to section headed 'New Value Concepts'.

Cost of Materials, Fuel, etc. Used in Rural Industry

The following table has been compiled to show details of those costs taken into account in rural industry:

Rural Industry: Recorded Costs, 1969-70
(\$'000)

Cost Item	Agriculture	Pastoral	Dairying	Poultry	Other Industries (a)	Total
Seed ..	1,363	328	141	..	..	1,832
Fertilisers ..	1,663	3,134	1,343	..	..	6,141
Spraying, Sheep-Dip ..	1,357	148	35	..	..	1,540
Stock Feed ..	64	6,872	2,546	2,628	..	12,110
Water for Irrigation ..	190	70	70	..	..	330
Power, Fuel & Light ..	1,883	836	765	139	..	3,624
Total ..	6,521	11,388	4,900	2,768	..	25,576

(a) Costs not available for bee-farming, hunting, forestry and fishing.

Net Value—Summary

The next table summarises, for a five-year period, the net value of production for all recorded industries:

Net Value of Production: All Recorded Industries

(\$ million)

Industry	1965-66	1966-67	1967-68	1968-69	1969-70
Primary, Rural—					
Agriculture	23.1	29.4	29.3	r 28.0	24.7
Pastoral	22.3	21.6	12.5	r 22.4	24.2
Dairying	18.0	19.2	18.2	r 20.3	22.4
Poultry	1.8	2.8	2.7	3.4	2.7
Bee-farming (a)	0.1	..	0.1	0.1	0.1
Total Rural	65.3	72.9	62.7	r 74.1	74.2
Primary, Non-Rural—					
Hunting (a)	0.3	0.5	0.4	0.3	0.3
Forestry (a)	13.8	14.3	r 13.4	13.4	16.1
Fishing (a)	2.7	3.0	r 3.7	4.1	3.3
Mining and Quarrying	20.3	25.8	25.2	(b)	(b)
Total Non-Rural	37.2	43.7	r 42.7	..	..
Total Primary	102.5	116.6	r 105.5	..	..
Secondary—					
Factories	175.6	194.6	198.0	(b)	(b)
Total Industries	278.1	311.1	r 303.5	..	..

(a) Local value of production.

(b) See introduction to section headed 'New Value Concepts'.

The next table compares the net values of production of the primary and secondary industries and shows the emerging dominance of secondary industry:

Net Value of Production, Selected Years: Primary-Secondary Industry Comparison

Year	Primary		Secondary		Total Net Value
	Net Value	Proportion of Total	Net Value	Proportion of Total	
	\$'000	per cent	\$'000	per cent	\$'000
1950-51	66,947	57.6	49,229	42.4	116,176
1953-54	65,427	49.7	66,129	50.3	131,556
1956-57	79,181	44.9	97,365	55.1	176,546
1959-60	75,808	38.6	120,392	61.4	196,201
1967-68 (a)	r 105,470	r 34.8	198,019	r 65.2	r 303,489

(a) See introductory section headed 'New Value Concepts'.

Tasmania and Australia Compared

Some indicator other than comparison with previous years is needed. Probably the most significant measure is the comparison between the net values of production for all recorded Tasmanian industries and those for Australia as a whole.

Net Value of Production: Tasmania and Australia

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
NET VALUE OF PRODUCTION—ALL RECORDED INDUSTRIES (\$ million)					
Tasmania	278.1	311.1	305.0	(a)92.0	(a)93.4
Australia	9,324.7	10,393.9	10,549.5	(a)3038.2	(a)2916.2
TASMANIAN PROPORTION OF AUSTRALIAN TOTAL (per cent)					
Primary, Rural—					
Agriculture	2.7	2.4	3.3	2.3	2.4
Pastoral	1.9	1.8	1.2	r 1.9	2.0
Dairying	r 5.2	5.2	4.9	r 5.4	5.4
Poultry	2.8	3.9	r 4.1	4.7	3.3
Bee-farming (b)	2.4	1.3	2.7	3.4	2.5
Total Rural	r 2.7	2.6	2.6	r 2.6	2.7
Primary, Non-Rural—					
Hunting (b)	2.5	4.0	4.2	3.2	2.5
Forestry (b)	12.5	13.2	r 12.2	12.0	r 14.0
Fishing (b)	6.6	6.8	6.8	7.0	5.8
Mining and Quarrying	4.6	5.0	4.4	(a)	(a)
Total Non-Rural	6.1	6.4	r 5.8	..	..
Total All Primary	3.3	3.3	3.4	..	..
Secondary—					
Factories	2.8	2.8	2.7	(a)	(a)
Total Industries	3.0	3.0	2.9	..	..

(a) Excludes mining and manufacturing sectors; see introductory section headed 'New Value Concepts'.

(b) Local value of production.

Tasmanian-Australian Comparison

Taking into account Tasmania's proportion of the Australian population (3.1 per cent), and examining the comparisons in the previous table, it is immediately apparent which are Tasmania's most important industries *on a national scale*. In order, they appear to be forestry, fishing and dairying; again *on a national scale*, the non-rural group of primary industries appears to be more significant than the rural group.

Leaving aside the question of Tasmania's contribution to the Australian total, the State's most important activity in terms of net value of production in 1967-68 was secondary industry (factories) followed by agriculture, mining, dairying, forestry and pastoral in that order.

Chapter 8

MANUFACTURING, ELECTRICITY AND GAS

MANUFACTURING

Historical

The evolution of Tasmanian farming is described in continuous annual statistics from 1818 but the early records relating to factories are extremely meagre. While the early colonial statisticians had immediately put on record such fundamental measures as acreages, crop yields and livestock numbers, they were content, in the matter of factories, to merely classify and count the number of establishments. Some concept of early manufacturing activity can be derived from the following table which has been adapted from the *Statistical Returns of Van Diemen's Land, 1824 to 1839*:

Comparative Account of Manufactories and Trades in Van Diemen's Land

Description of Establishment	Number of Establishments		Description of Establishment	Number of Establishments	
	1824	1838		1824	1838
Agricultural Implement Makers .. ..	..	9	Mills, Steam .. ..	..	3
Breweries	3	19	Mills, Water and Wind ..	5	51
Candle Makers .. ..	..	4	Potteries .. ..	..	1
Cooperages .. ..	..	9	Printing Offices	1	8
Coachmakers .. ..	..	2	Ropemakers	1	1
Distilleries	1	4	Sailmakers	1	5
Dyers .. ..	..	2	Sawmills	1	2
Engineers .. ..	..	7	Shipwrights .. ..	..	5
Fellmongers	2	4	Snuff Makers .. ..	..	1
Foundries .. ..	..	3	Soap Makers	1	1
Furriers .. ..	..	2	Tanners	6	15
Mast and Block Makers ..	..	1	Wool Staplers .. ..	..	3

The grinding of wheat for flour gave rise to the first demand for power, the original solution being water mills and windmills followed by use of the steam engine (the first steam mill commenced in 1831). Later records refer to 'mills, horse-driven', the beast being driven around a circular track. The relation between early factory activity and the farming and whaling economy in which it grew is indicated by the fact that, in the table, five of the descriptions (fellmongers, etc.) refer to processing of animal products, four (shipwrights, etc.) to the construction and maintenance of ships and two (breweries, distilleries) to the making of alcoholic beverages for which there were nearly as many licensed outlets as exist today.

The *Account of Manufactories and Trades*, on a simple establishment basis similar to the last table, was published annually throughout the 19th century and is at least a guide to the introduction of new industries and new skills to the State.

The presentation of factory statistics, in the private sector, on a simple establishment basis failed to answer a number of questions such as the number of employees, the quantities produced, the value of output, the capital invested, etc., and this lack of information persisted until 1882 when the Government Statistician began publishing quantity, value and employment data for jam factories and breweries; the coverage of industries was then gradually expanded until, by 1911, publication had commenced of annual factory statistics showing most of the basic information sought in current collections.

Some indication of the transformation of Tasmania from an essentially rural economy is given in the following table in which the proportion of the work force engaged in manufacturing activities is compared in the period 1911 to 1966.

Employment in Tasmanian Factories Compared with Total Labour Force

Particulars	1911	1933	1947	1954	1961	(a) 1966
Factory Employment						
(b) —						
Males ..	8,737	7,147	16,186	20,249	24,811	28,041
Females ..	1,561	2,086	3,751	4,340	5,347	6,274
Persons ..	10,298	9,233	19,937	24,589	30,158	34,315
Labour Force (c) —						
Males ..	61,182	69,226	80,201	93,976	101,289	106,557
Females ..	13,343	16,861	20,117	24,232	29,628	40,765
Persons ..	74,525	86,087	100,318	118,208	130,917	147,322
Factory Employment as Percentage of Labour Force —						
Males ..	14.3	10.3	20.2	21.5	24.5	26.3
Females ..	11.7	12.4	18.6	17.9	18.0	15.4
Persons ..	13.8	10.7	19.9	20.8	23.0	23.3

(a) Labour force figures in 1966 not strictly comparable with those for previous years; see 'Employment' section of Chapter 13, 'Labour, Wages and Prices'.

(b) Average number of persons engaged, including working proprietors, as reported in the annual Factory Census for 1911 and those for financial years ending in 1933, 1947, 1954, 1961 and 1966.

(c) Source: censuses of population in years shown; includes employers and self-employed.

Electric Power and Industrialisation

In 1900, the Government Statistician published operational details of Tasmania's chief manufacturing industries; these read in part as follows (with specification of the number of 'hands' employed): Sawmills, 920; Jam Factories, 499; Boot Factories, 364; Brickyards and Potteries, 247; Woollen Mills, 177; Tanneries and Fellmongeries, 131; Flour Mills, 126; Breweries, 97; Butter Factories, 92; Fruit-drying sheds, 76; Soap and Candle Factories, 57; Bark Mills, 33; Bacon Factories, 18. At this time, virtually all power was generated by steam engine on the factory site; the alternative sources such as gas, oil and electricity being very little used. A year later the establishment of the Commonwealth of Australia introduced free trade between the States and this deprived Tasmanian industries of the protection they had previously enjoyed. The free importation of Australian manufactures, chiefly from Victoria, brought about a period of stagnation and inhibited the further development of manufacturing industry within the State; loss of population by migration to other parts of Australia in each decade up to World War II reflected the lack of employment opportunities which an expansion of manufacturing activity would have provided.

If no new factor had been introduced in the years after Federation, the probability is that Tasmania would have maintained a predominantly rural economy, diversified to a limited extent by sawmilling and mining. In these circumstances, employment opportunities would have been severely restricted and the more industrialised continental States would have continued to rapidly drain the island's population growth attributable to natural increase. The new factor that eventually transformed the State's economy was hydro-electric power but its possibilities could not be exploited without heavy capital expenditure and massive construction works, all of which required time. It is paradoxical, therefore, that the first major hydro-electric construction works were initiated in a period of stagnation immediately prior to World War I, and that the second major construction phase was pushed forward during the 1930s when the State's factory activity was at a very low ebb due to the general economic depression.

The key to the further industrialisation of Tasmania was its abundant supply of water at high level in the Central Plateau and the State's industrial revolution may be thought of as beginning in 1916 when the Waddamana turbines below the Great Lake began operating; from the initial 10,000 horsepower then developed, the hydro-electric system has expanded to today's capacity of over 1.34 kW. The availability of cheap electric power resulted in the establishment of new types of industry, some on a very large scale; examples are: electrolytic zinc production, 1917; carbide manufacture, 1918; fine paper production, 1938; aluminium production, 1955; ferro-manganese production, 1962. The introduction of pulp and paper manufacture is a special case to the extent that changes in technology made possible the use of native hardwoods for the first time; the production of suitable pulp from eucalypts was pioneered in Tasmania before plants were established in other Australian States.

Given that electrical power is cheap and usually abundant, the question arises as to why the industrialisation of the State has not progressed further. The two obvious impediments to the rapid introduction of new enterprises are the small size of the local market and the costs of transportation to the principal markets in the other States. The weighing of these factors (i.e. cheaper power against possibly higher transportation costs) has naturally had the effect of attracting industries requiring large quantities of power. Such undertakings are not necessarily large employers of labour so it is possible that industrialisation, measured by capital investment and electrical power consumption, may have progressed more rapidly than industrialisation measured by involvement of the labour force in factory activities.

Without this advantage in electrical power, Tasmania would be largely restricted to an economy based on its own primary products—and even these, in many cases, would need to be processed in other Australian States. With it, Tasmania is not only capable of processing its own primary products but also of importing raw materials (e.g. the ores and concentrates used at Risdon and Bell Bay) for its own manufacturing industries.

FACTORY STATISTICS

Introduction

Factory statistics based on the new definitions developed for the integrated economic censuses (see Appendix A for further details) are not comparable with those produced under the old system i.e. before 1968-69. However, some of the old series have been retained in the following section, to provide a picture over a number of years of factory activities in Tasmania. As data become available from future integrated economic censuses the old series will be replaced.

Factory Statistics Prior to 1968-69

The statistics dealing with factories before 1968-69 were compiled from returns collected under the authority of the Commonwealth *Census and Statistics Act 1905* as amended, and supplied annually by manufacturers. A return had to be supplied for every factory, which was defined for this purpose as an establishment where four or more persons were employed or where power (other than manual) was used in any manufacturing process.

If a manufacturing business was conducted in conjunction with any other activity, particulars relating to the manufacturing section only were included in the statistics. Where two or more industries were conducted in the same establishment, a separate return was obtained for each industry, if practicable.

Manufacturers were required to state in their returns particulars of the number, wages, etc. of their employees, the value of premises and equipment and of factory stocks, the horsepower of machinery, the value and, in many cases the quantities of raw materials and fuel used, and quantities and values of principal articles produced. The returns obtained from manufacturers were not intended to show a complete record of the income and expenditure of factories nor to show the profits or losses of factories collectively or individually.

Employment Definitions

The average number of persons employed was compiled on two different bases: (i) the average during the period of operation; and (ii) the average over the whole year. The former was simply the aggregate of the average number of persons employed in each factory during its period of operation (whether for the whole or only part of the year). This average was used only for details dealing with the classification according to the number of persons employed. The latter, used in all other instances, was calculated by reducing the average number working in the factories to the equivalent number working for a full year.

Value Definitions

The *value of factory output* was defined as the value of goods manufactured or their value after passing through the particular process of manufacture and *included the amount received for repair work*, work done on commission and receipts for other factory work. The basis of the valuation of output was the selling value of the goods at the factory, exclusive of all delivery costs and charges and excise duties, but inclusive of Government bounty and subsidy payments.

The *value of production* was defined as the value added to raw materials by the process of manufacture. It was calculated by deducting from the value of factory output the value (at the factory) of those items of cost, other than wages and salaries, specified on the factory statistical collection form, namely materials used, containers and packing, power, fuel and light used, tools replaced, and materials used in repairs to plant (but not depreciation charges); the remainder so derived was the value added to raw materials and represented the amount available for wages, taxation, rent, interest, insurance, etc. and profit.

Classification of Factories, Pre-1968-69

In the compilation of statistical data dealing with factories in Australia, a standard classification formulated at a Conference of Australian Statisticians in 1902 and periodically revised, was used until the year 1929-30. A new classification was introduced in 1930-31 and was revised and extended to a minor degree in regard to sub-classes of industry in accordance with decisions of the Statisticians' Conference, 1945.

The classification system was again varied for the economic census of 1968-69; the changes involved are discussed in Appendix A. Details of the factory classes and sub-classes in use before 1968-69 may be found in the 1971 *Year Book*.

Summary of Factory Statistics, Pre-1968-69

In the tables that follow, factory statistics, where appropriate, are presented in terms of the class of industry.

The next table shows factory development over a long period as measured by number of factories, employment, value of production, etc. In making comparisons over so long a period, account should be taken of changes in the purchasing power of money. The series ends in 1967-68 but data for 1968-69 appear later in this Chapter in the section 'Census of Manufacturing Establishments, 1968-69'.

Development of Factories from 1911: Selected Years

Year	Number of Factories	Average Number of Persons Engaged (a)	Salaries and Wages Paid (b)	Value of—			
				Materials Used, Fuel, etc. (c)	Production (d)	Output	Land, Buildings, Plant and Machinery
	no.	no.	\$m	\$m	\$m	\$m	\$m
1911 ..	609	10,298	1.7	4.2	2.9	7.1	4.5
1920 ..	616	10,225	3.0	8.8	5.5	14.3	5.8
1929-30	845	10,820	4.1	10.0	7.1	17.1	19.9
1934-35	926	10,555	3.2	8.1	6.3	14.4	17.5
1939-40	980	14,670	5.4	13.5	12.5	26.0	21.1
1944-45	1,006	19,511	10.0	24.9	17.8	42.7	26.9
1949-50	1,456	23,506	19.3	51.5	38.7	90.2	44.8
1954-55	1,597	25,452	37.7	101.0	76.2	177.2	118.9
1959-60	1,683	29,662	57.6	147.7	120.4	268.1	251.3
1963-64	1,746	31,833	70.6	188.5	152.6	341.1	310.1
1964-65	1,805	32,580	76.5	214.2	167.3	381.5	364.3
1965-66	1,792	34,315	83.0	229.0	175.6	404.6	370.6
1966-67	1,771	34,879	90.8	243.4	194.6	438.0	403.1
1967-68	1,797	35,178	96.2	247.1	198.0	445.1	448.0

(a) Average for whole year after 1927-28; earlier averages relate to the period of operation. Includes working proprietors.

(b) Excludes drawings of working proprietors.

(c) Includes materials used plus cost of power, fuel, light, water and lubricating oils, containers, packing, etc., tools replaced and repairs to plant but excludes depreciation allowance and sundry overhead charges (e.g. rates, land tax, etc.) not specified on the factory form.

(d) Value of output less cost of materials used, fuel, etc. as defined in note (c).

Factories in Statistical Divisions, Pre-1968-69

For a definition of the component industry groups of each classification, see the tables in the following section 'Factories Classified According to Class of Industry'.

A general indication of the geographical distribution of factories is given in the following table, the analysis dealing with factory Classes I to XV inclusive. In Tasmania, factory Class XVI, 'Heat, Light and Power', constituted something of a problem in any geographical distribution because the chief component of the class is the power houses, or 'central electric stations' generating electricity for the State Hydro-Electric Commission. To take a

specific case, it is theoretically possible for the basic water storage to be in one statistical division, the generating stations in a second division and the point of delivery, through transmission lines, in seven other divisions. Since the output of energy from the stations is integrated into a State-wide grid, the allocation of value of output, value of production, etc. to various statistical divisions would merely confuse the issue; accordingly, Class XVI, 'Heat, Light and Power', is completely excluded from the table.

Factories: Principal Items by Statistical Divisions and Selected Areas, 1967-68 (a)
Classes I-XV Only

Particulars	Factories (no.)	Employ- ment (no.)	Salaries and Wages Paid (\$'000)	Value (\$'000) of—			
				Materials Used, Fuel, etc.	Produc- tion	Output	Land, Buildings, Plant and Machinery
STATISTICAL DIVISIONS							
Hobart. . .	557	13,427	37,209	84,540	68,096	152,637	70,155
North Central. .	301	7,124	16,344	31,837	25,976	57,813	22,945
North Western	440	9,097	26,825	76,477	53,922	130,399	72,946
North Eastern	151	2,223	6,884	26,112	17,482	43,594	49,511
North Midland	90	1,190	2,926	8,753	5,121	13,875	5,920
Midland . .	57	257	597	1,605	1,148	2,754	430
South Eastern. .	31	135	278	829	297	1,126	1,160
Southern . .	118	693	1,481	4,685	2,864	7,548	6,159
Western . .	29	602	2,103	10,704	7,688	18,392	1,275
Total Classes I-XV . .	1,774	34,748	94,646	245,542	182,596	428,138	230,501
SELECTED AREAS							
Urban Hobart. .	510	12,210	33,420	76,076	60,076	136,152	60,352
Urban Launce- ston . .	355	8,251	19,097	39,588	30,876	70,464	28,860
Remainder of State. . .	909	14,287	42,129	129,879	91,644	221,522	141,289
Total Classes I-XV . .	1,774	34,748	94,646	245,542	182,596	428,138	230,501

(a) Definitions of employment, salaries and wages, materials used, fuel, etc., and value of production have been given in initial summary tables.

As indicated in the previous table, the chief centre of factory activity, measured in terms of value of production, was the Hobart Statistical Division; its contribution to total added value was 37 per cent. Major establishments in the Division engaged in zinc and chemical fertiliser production, paper-making, carbide manufacture, confectionery making, fruit processing and various types of metalworking and engineering.

Contributing 30 per cent to the total value of production was the North Western Division, with major industries including paper manufacture, cement production, iron ore pellet production, plywood and building-board making, fruit and vegetable canning and preserving, and some textile making. The North Central Division (City of Launceston) contributed fourteen per cent and is the acknowledged textile 'capital' of the State. Next came the North Eastern Division with ten per cent, major establishments engaging in aluminium and ferro-manganese production, and food preserving.

Factories Classified According to Class of Industry

The following table contains a summary of the principal statistics for factories by class of industry in Tasmania:

Principal Items by Class of Industry, 1967-68

Class of Industry	Factories	Employment	Salaries and Wages Paid	Value of—			
				Materials Used, Fuel, etc.	Production	Output	Land, Buildings, Plant and Machinery
	no.	no.	\$m	\$m	\$m	\$m	\$m
I. Treatment of Non-Metalliferous Mine and Quarry Products	58	888	2.73	7.11	8.11	15.22	10.88
II. Bricks, Pottery, Glass, etc. .. .	21	359	1.04	1.14	2.00	3.13	2.76
III. Chemicals, Dyes, Explosives, Paints, Oils, Grease .. .	31	920	3.27	10.43	9.19	19.61	11.23
IV. Industrial Metals, Machines, Conveyances .. .	698	12,155	35.54	80.40	68.57	148.97	95.61
V. Precious Metals, Jewellery, Plate .. .	19	47	0.09	0.08	0.16	0.23	0.20
VI. Textiles and Textile Goods (not Dress) .. .	24	3,986	8.86	19.86	12.90	32.76	12.39
VII. Skins and Leather (not Clothing or Footwear) .. .	5	48	0.12	0.70	0.17	0.87	0.09
VIII. Clothing (except Knitted) .. .	82	726	1.22	1.13	2.33	3.46	2.41
IX. Food, Drink and Tobacco .. .	279	5,413	13.59	63.50	25.00	88.50	39.80
X. Sawmills, Joinery, Boxes, etc., Wood Turning and Carving .. .	403	3,919	9.65	24.93	17.96	42.89	13.13
XI. Furniture, Bedding, etc. .. .	65	672	1.33	2.74	2.31	5.04	1.91
XII. Paper, Stationery, Printing, Bookbinding, etc. .. .	50	5,314	16.54	32.56	32.65	65.21	38.13
XIII. Rubber .. .	19	139	0.36	0.77	0.80	1.57	1.12
XIV. Musical Instruments, etc. .. .	..	..	..	..	..	..	..
XV. Miscellaneous Products .. .	20	162	0.30	0.21	0.45	0.65	0.85
Total Classes I to XV .. .	1,774	34,748	94.65	245.54	182.60	428.14	230.50
XVI. Heat, Light and Power .. .	23	430	1.59	1.52	15.42	16.94	217.55
Total All Classes .. .	1,797	35,178	96.24	247.06	198.02	445.08	448.05

Salaries, Wages and Other Factory Costs, Pre-1968-69

The table that follows has been compiled to show male and female earnings by the type of industry in which employed:

Salaries and Wages in Factories (a), 1967-68
(\$'000)

Class of Industry	Managers, Clerical Staff, Chemists, Draftsmen, etc.		All Other Employees		Total		
	Males	Females	Males	Females	Males	Females	Persons
I. Treatment of Non-Metalliferous Mine and Quarry Products .. .	518	55	2,135	19	2,653	74	2,727
II. Bricks, Pottery, Glass, etc. .. .	109	17	913	5	1,022	22	1,044
III. Chemicals, Dyes, etc. .. .	825	100	2,328	16	3,153	116	3,269
IV. Industrial Metals, Machines, etc. .. .	5,784	781	28,301	671	34,085	1,452	35,538
V. Precious Metals, Jewellery, Plate .. .	4	5	78	..	82	5	88
VI. Textiles and Textile Goods (not Dress) .. .	1,086	401	4,004	3,368	5,090	3,769	8,859
VII. Skins and Leather (not Clothing or Footwear) .. .	32	..	88	1	120	1	121
VIII. Clothing (except Knitted) .. .	122	39	492	570	614	609	1,223

Salaries and Wages in Factories (a), 1967-68—continued
(\$'000)

Class of Industry	Managers, Clerical Staff, Chemists, Draftsmen, etc.		All Other Employees		Total		
	Males	Fe- males	Males	Fe- males	Males	Fe- males	Persons
IX. Food, Drink and Tobacco	2,337	720	8,487	2,047	10,824	2,767	13,591
X. Sawmills, Joinery, Boxes, etc.	982	100	8,497	77	9,478	177	9,655
XI. Furniture, Bedding, etc. . .	171	60	995	103	1,167	162	1,329
XII. Paper, Stationery, Printing, Binding, etc.	2,435	442	12,423	1,244	14,858	1,686	16,543
XIII. Rubber	45	14	295	..	341	14	355
XIV. Musical Instruments, etc.	..	..	..	..	..	..	..
XV. Miscellaneous Products . .	43	12	211	38	254	50	304
Total Classes I to XV	14,494	2,746	69,248	8,159	83,742	10,905	94,646
XVI Heat, Light and Power . .	132	..	1,454	3	1,587	3	1,590
Total All Classes . .	14,626	2,746	70,702	8,162	85,329	10,908	96,236

(a) Excludes drawings of working proprietors.

Costs of Manufacture (other than Salaries and Wages), Pre-1968-69

The next table was compiled to summarise the various costs (apart from salaries and wages), specified in the 'old style' factory collection:

'Statistical' Costs of Manufacture Other Than Wages and Salaries (a)
(\$'000)

Particulars	1957-58	1963-64	1964-65	1965-66	1966-67	1967-68
Power, Fuel and Light Used . .	9,775	15,768	17,676	18,453	19,026	18,651
Water Used (not as Power) . .	189	404	448	501	554	546
Lubricating Oils	183	193	203	227	246	287
Repairs and Replacements . .	5,978	7,795	9,407	9,564	11,225	11,883
Wrappers, Containers, Labels, etc.	7,284	9,722	10,644	11,552	11,315	12,606
Total (excluding Materials Used)	23,409	33,882	38,378	40,296	42,366	43,973
Materials Used	100,582	154,613	175,920	188,678	201,027	203,084
Total 'Statistical' Costs (a) . .	123,991	188,495	214,299	228,974	243,393	247,057

(a) 'Statistical' costs are restricted to those shown in the table and exclude items such as interest, rates and taxes, insurances, depreciation, etc.

Value of Output and Value of Production, Pre-1968-69

In the section dealing with the definitions used in factory statistics, it was indicated that the value of output was not a satisfactory indicator for making year-to-year comparisons or for making comparisons between classes of industry. To the extent that the finished article from one industry could become a material for use in the manufacturing process of another industry, values of output were likely to be inflated by 'double counting'. Cardboard boxes and containers, for example, a finished product of Class XII, may be used to pack the products of industries in most other classes; similarly, electric power, a final output from Class XVI, was also taken into all other industry classes as a

cost of production. For these and other considerations, the better measure for purposes of comparison was undoubtedly value of production (i.e. value of output less 'statistical' costs but with no deduction of wages and salaries).

Value of factory output by classes of industry for a five-year period is shown in the following table:

Value of Factory Output (\$ million)					
Class of Industry	1963-64	1964-65	1965-66	1966-67	1967-68
I. Treatment of Non-Metalliferous Mine and Quarry Products	10.58	10.38	11.68	11.75	15.22
II. Bricks, Pottery, Glass, etc.	2.26	2.58	2.58	2.68	3.13
III. Chemicals, Dyes, etc.	14.90	16.93	17.88	19.78	19.61
IV. Industrial Metals, Machines, etc. ..	110.66	128.85	134.91	150.04	148.97
V. Precious Metals, Jewellery, Plate ..	0.17	0.17	0.19	0.20	0.23
VI. Textiles and Textile Goods (not Dress)	28.70	32.90	32.35	33.45	32.76
VII. Skins and Leather (not Clothing or Footwear)	0.81	1.01	0.89	1.06	0.87
VIII. Clothing (except Knitted)	2.78	3.13	3.30	3.22	3.46
IX. Food, Drink and Tobacco	68.55	74.59	81.07	88.85	88.50
X. Sawmills, Joinery, Boxes, etc.	32.30	36.44	40.21	41.15	42.89
XI. Furniture, Bedding, etc.	3.24	3.58	3.71	4.54	5.04
XII. Paper, Stationery, Printing, Binding, etc.	50.41	53.72	57.86	61.37	65.21
XIII. Rubber	1.18	1.19	1.30	1.55	1.57
XIV. Musical Instruments, etc. .. ..	..	..	..	..	..
XV. Miscellaneous Products	0.39	0.51	0.77	0.64	0.65
Total Classes I to XV	326.93	365.97	388.71	420.28	428.14
XVI. Heat, Light and Power	14.13	15.58	15.88	17.68	16.94
Total All Classes	341.06	381.55	404.58	437.96	445.08

The next table shows the value of production in Tasmanian factories in the period 1963-64 to 1967-68:

Value of Factory Production (\$ million)					
Class of Industry	1963-64	1964-65	1965-66	1966-67	1967-68
I. Treatment of Non-Metalliferous Mine and Quarry Products	4.77	4.86	5.21	5.08	8.11
II. Bricks, Pottery, Glass, etc.	1.43	1.64	1.69	1.74	2.00
III. Chemicals, Dyes, etc.	7.15	7.88	8.15	9.17	9.19
IV. Industrial Metals, Machines, etc. ..	49.25	54.50	58.17	68.79	68.57
V. Precious Metals, Jewellery, Plate ..	0.13	0.13	0.14	0.15	0.16
VI. Textiles and Textile Goods (not Dress)	10.50	13.48	12.46	13.11	12.90
VII. Skins and Leather (not Clothing or Footwear)	0.16	0.16	0.17	0.19	0.17
VIII. Clothing (except Knitted)	1.82	2.02	2.13	2.14	2.33
IX. Food, Drink and Tobacco	22.47	23.17	24.42	27.20	25.00
X. Sawmills, Joinery, Boxes, etc.	13.58	15.67	17.32	17.08	17.96
XI. Furniture, Bedding, etc.	1.47	1.60	1.66	2.07	2.31
XII. Paper, Stationery, Printing, Binding, etc.	25.72	26.52	28.03	30.15	32.65
XIII. Rubber	0.64	0.59	0.60	0.72	0.80
XIV. Musical Instruments, etc. .. ..	..	..	..	..	..
XV. Miscellaneous Products	0.27	0.33	0.41	0.42	0.45
Total Classes I to XV	139.36	152.56	160.57	178.00	182.60
XVI. Heat, Light and Power	13.21	14.69	15.03	16.57	15.42
Total All Classes	152.57	167.25	175.61	194.57	198.02

Principal Articles Manufactured

The next table lists the principal articles manufactured in Tasmania, irrespective of the sub-class of industry in which production took place. In several cases, however, where there are only one or two producers or where one producer dominates, it is not possible to publish details for articles that are important and would otherwise appear in the table. To give some indication of changes in production, quantity details are given for 1938-39, 1959-60, 1969-70 and 1970-71.

Principal Articles Manufactured: Quantities

Article	Unit	1938-39	1959-60	1969-70 ^p	1970-71 ^p
Acid, Sulphuric (100 per cent)	tons	14,158	127,038	262,240	381,077
Acrated Waters	'000 gal	338	1,838	2,937	3,090
Bacon and Ham	'000 lb	1,935	2,562	1,381	1,775
Bran and Pollard	short tons	8,939	13,201	9,862	9,914
Bread (2 lb loaf equivalents) ..	'000	11,337	27,175		
Bricks, Clay	'000	14,541	23,975	21,489	19,224
Butter (a)	tons	4,053	11,744	16,085	15,032
Cheese	tons	1,420	328	5,322	5,468
Electricity, Total Generated ..	mkWh	567	2,532	5,140	5,451
Fertilisers—					
Sulphate of Ammonia	tons	..	57,601	39,922	39,616
Superphosphate	tons	30,086	102,613	131,140	103,659
Plaster Sheets	sq yd	120,678	778,522	229,784	171,158
Flour	short tons	19,582	30,872	24,192	24,542
Fruit—					
Canned or Bottled—					
Apples, Solid Pack	'000 lb	2,313	16,584	12,962	11,002
Berry Fruits	'000 lb	918	2,944	425	442
Dehydrated and Evaporated					
Apples	'000 lb	762	558	724	576
Bed Bases, Woven Wire	no.	3,386	7,286	8,966	7,090
Paper, Newsprint	tons	..	88,510	170,576	175,860
Tallow	'000 lb	1,694	7,699		
Timber—					
Sawn, Peeled or Sliced (b)—					
Hardwood	'000 sup ft	83,499	164,895	169,805	167,113
Softwood	'000 sup ft	1,529	4,764	5,491	4,984
Dressed—					
Floorboards	'000 sup ft	5,124	29,511		
Weatherboards	'000 sup ft	1,911	3,743		
Other	'000 sup ft	1,165	15,979		
Zinc, Refined	tons	69,825	117,893	168,232	159,708

(a) Includes butter equivalent of butter oil.

(b) Includes timber to be further processed.

The articles just listed do not include the following important Tasmanian products: aluminium, automotive engine bearings, carbide, cement, confectionery, welding electrodes, ferro-manganese alloys, hand tools, hard-board, iron ore pellets, particle board, printing, writing and wrapping papers, titanium di-oxide, canned, dehydrated and quick frozen vegetables, wood pulp, woollen manufactures, other textile products and sodium alginate. Some articles, although principal manufactures, such as cakes, pastry and pies, wooden furniture and joinery (excluding doors) are not included, as value details only are collected for such items.

CENSUS OF MANUFACTURING ESTABLISHMENTS, 1968-69**Introduction**

As related in the previous section of this chapter, annual censuses of factories were conducted by the Bureau from almost the start of the present century; the last 'old style' factory census covered the year 1967-68. The year 1968-69 was covered by five simultaneous economic censuses in the: (i) manufacturing; (ii) mining; (iii) wholesale trade; (iv) retail trade; and (v) electricity and gas production and distribution sectors.

The integrated economic censuses 1968-69 are fully described in Appendix A in which there also appears an explanation of the factors which made necessary the termination of 'old style' factory censuses and the start of a new series, based on new reporting unit and data concepts. In this section, it is intended to give the *preliminary results* of the 1968-69 manufacturing census for Tasmania, to point out differences between the old-style and new-style censuses but not to discuss reasons for the changes (these are set out in Appendix A).

Definition of Manufacturing Establishment*All Activities at One Location*

In all 1968-69 economic sector censuses the basic census unit, in general, covers all the operations carried on under the one ownership at a single physical location. The *manufacturing establishment* is thus one engaged predominantly in manufacturing but the data supplied for it now cover (with a few exceptions) all activities at the location. The data cover not only specified manufacturing primary to one class of industry, but also:

- (a) any other manufacturing activity (i.e. production of goods primary to another class of industry);
- (b) any selling and distribution activities connected with the products manufactured; and
- (c) any non-manufacturing activity (e.g. selling of goods not manufactured by the establishment, or extraction of raw materials for the use by the establishment).

Exceptions to this total coverage rule are made where the secondary or subsidiary activity (in terms of gross value) exceeds \$1m and such locations are treated for statistical purposes as two or more establishments corresponding to the various kinds of activity carried on.

Administrative Offices and Ancillary Units

The manufacturing establishment statistics also include data relating to separately located administrative offices and ancillary units serving the establishment and forming part of the enterprise which owns and operates the establishment. These units include head offices, storage premises and certain manufacturers' sales branches or sales offices; however, if the last types of unit distribute to customers from stocks they hold, then they are treated as establishments in their own right and included in the wholesale census.

Effects of New Classification

The establishments' classification is based on the Australian Standard Industrial Classification (ASIC). ASIC defines the industries in the economy for statistical purposes and specifies the scope of the different economic censuses

without gaps or overlaps. The adoption of ASIC has resulted in changes in scope between the 1968-69 manufacturing census and the earlier factory censuses. The main changes in scope are as follows:

- (a) Electricity and gas production is made the subject of a separate census, the coverage of which is extended to include distribution.
- (b) Establishments mainly engaged in the following activities, previously included in factory censuses are excluded in 1968-69: (i) motor vehicle repairs; (ii) repair and servicing of agricultural machinery; (iii) dry-cleaning, laundering, and dyeing services; (iv) watch, clock and jewellery repairing; (v) custom dress-making and tailoring, repairs, alterations, etc.; (vi) installing and repairing of blinds and awnings, making up and installing of curtains; and (vii) repair of domestic appliances. Establishments mainly engaged in these activities were excluded from the 1968-69 manufacturing census and included in either the census of retail trade or the census of wholesale trade. (The full title in the retail sector was 'Census of Retail Trade and Selected Services'.)
- (c) Establishments mainly engaged in slaughtering or milk treatment were previously excluded from the factory census but were included in the 1968-69 manufacturing census.

The most obvious effect of the change in scope is the change in the number of Tasmanian establishments: the number included in the 1967-68 factory census was 1,797; the number included in the 1968-69 manufacturing census (preliminary results) was only 1,039. The factors causing this sharp reduction can be summarised as follows: (i) change in scope; (a) and (b) above caused a very large decrease while (c) caused only a small increase; and (ii) classification by major activity caused the elimination of establishments where manufacturing was not the major activity; such establishments were covered in the mining, retail or wholesale censuses if their major activities were reported in these sectors, or otherwise classified as 'out-of-scope' of all present census sectors.

New Data Concepts

The introduction of standardised data items in all census sectors has involved changes in the content of manufacturing statistics. Basic items in the former factory censuses were 'value of output' and 'value of production' (see definitions in 'Factory Statistics, Prior to 1968-69'); the new corresponding items in the 1968-69 manufacturing census are 'turnover' and 'value added'. The new items are derived in a different way and while the old 'value of production' is somewhat similar in concept with the new 'value added', the old 'value of output' referred to value at the factory door whereas 'turnover' relates to actual sales. The new items are defined below:

Value of Turnover

The Value of Turnover: *Equals* Sales and transfers out of goods manufactured by the establishment;

Plus Sales and transfers out of goods not manufactured by the establishment;

Plus Bounties and subsidies on production;

Plus All other operating income;

Plus Capital work done for own use, or for rental or lease.

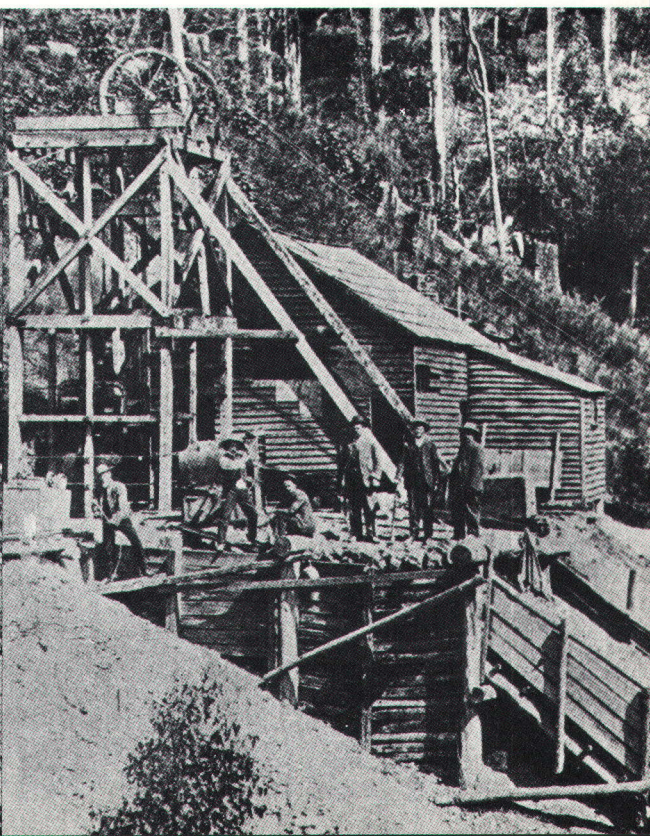


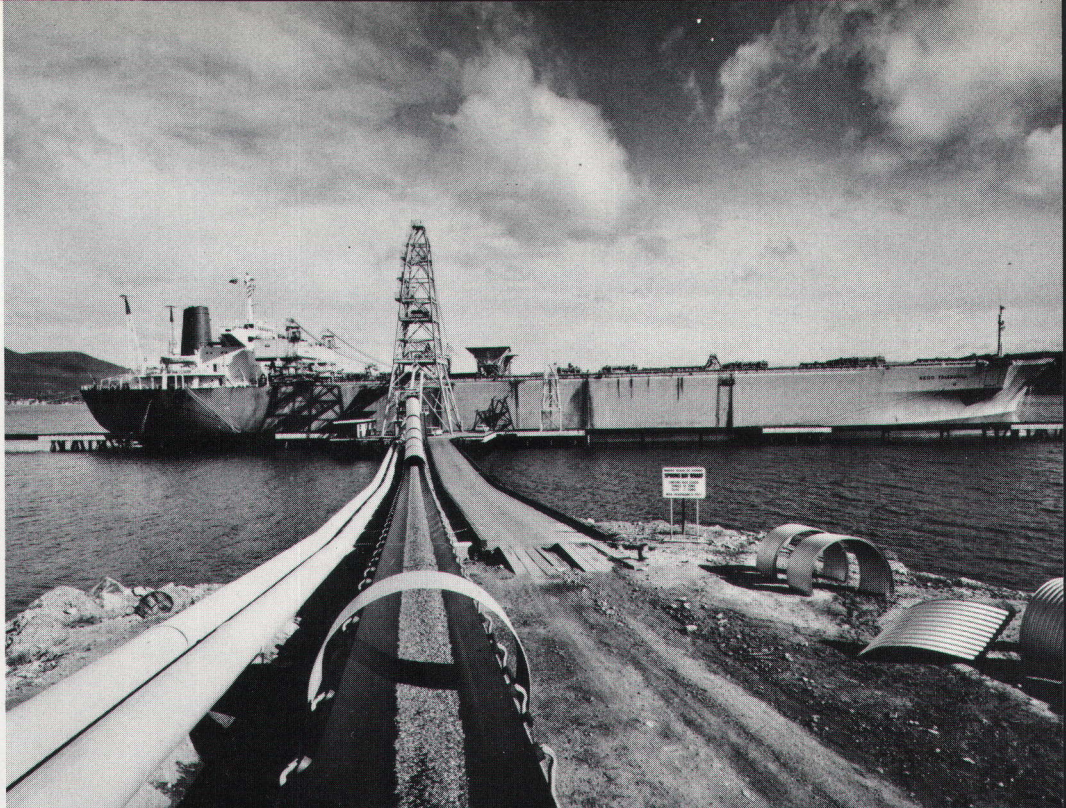
Cleveland Tin Mine, Luina, October 1971

(Vern Reid)

General view, Blythe River copper mine (c.1909)
(The Examiner)

Pit-head, Blythe River copper mine (c.1909)
(The Examiner)



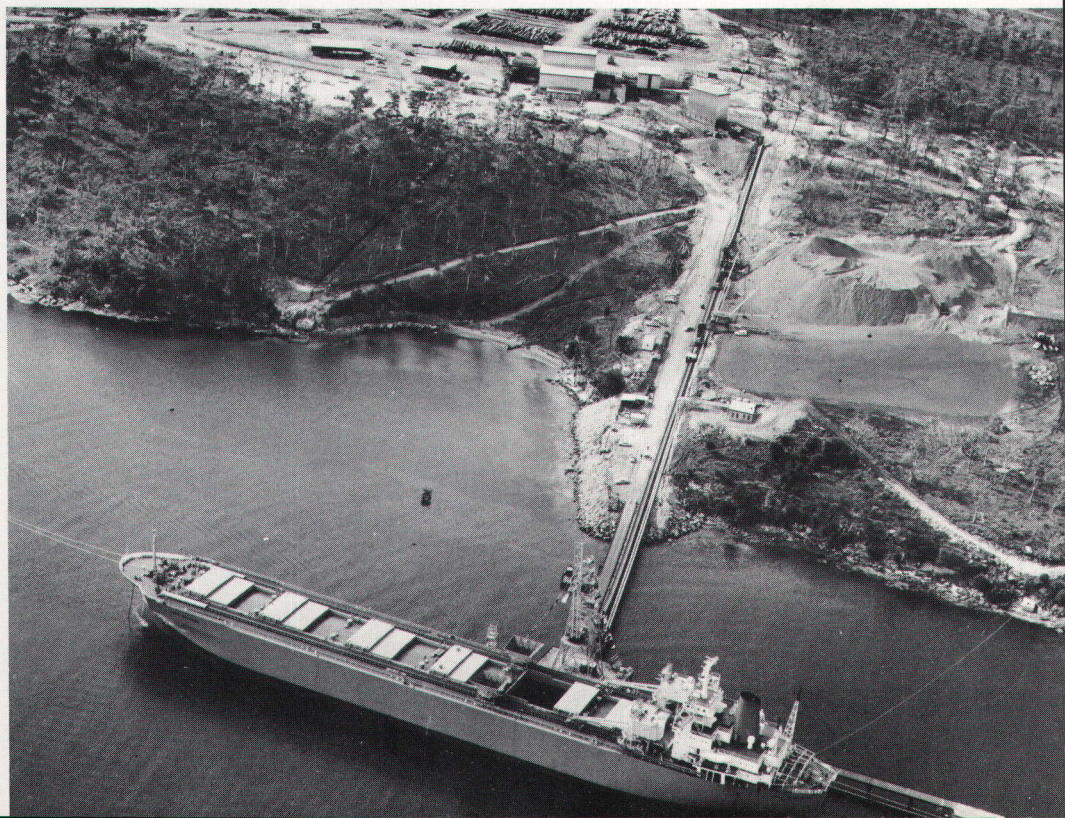


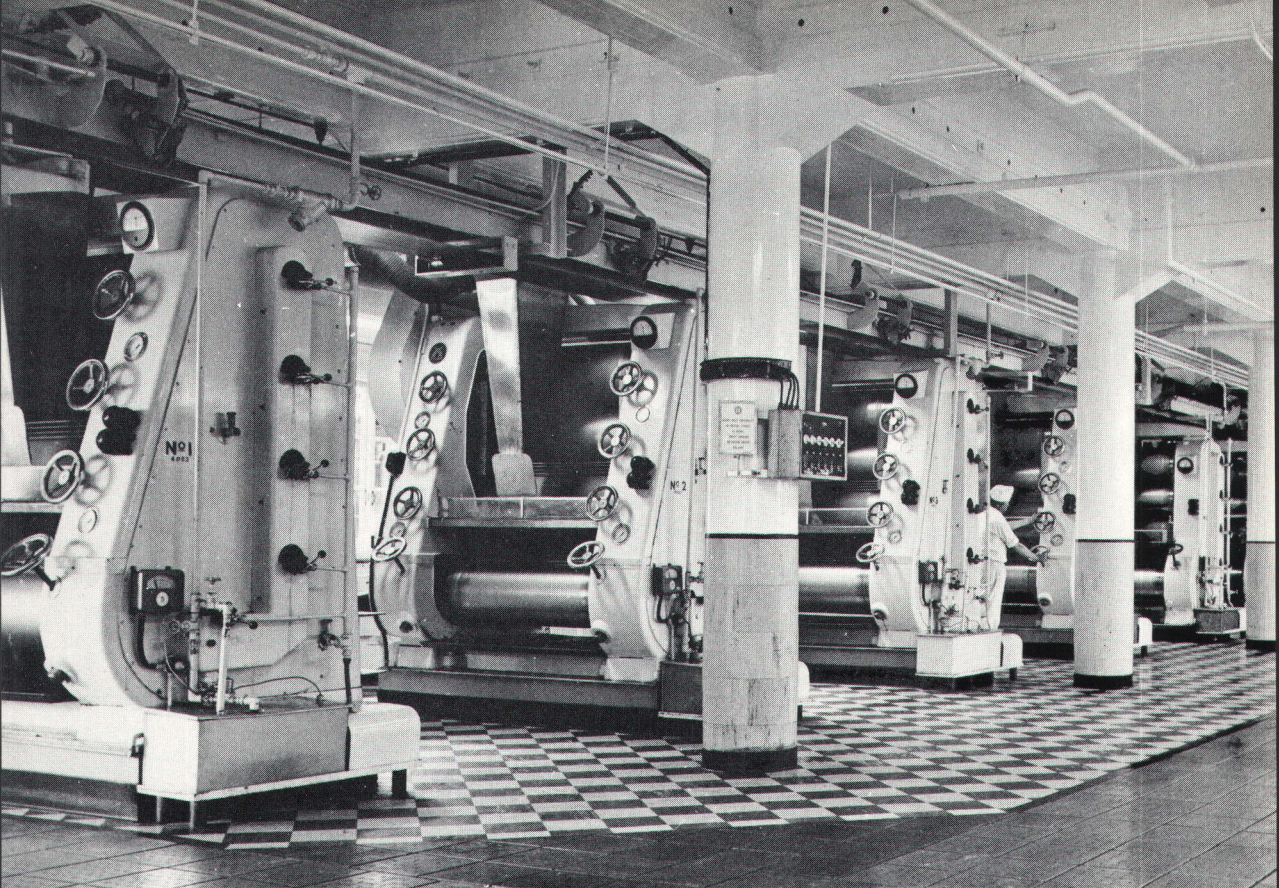
Woodchips being loaded by conveyer belt at Spring Bay

(Dept of Film Production)

Nego Triabunna loading woodchips at Spring Bay, April 1971

(Vern Reid)



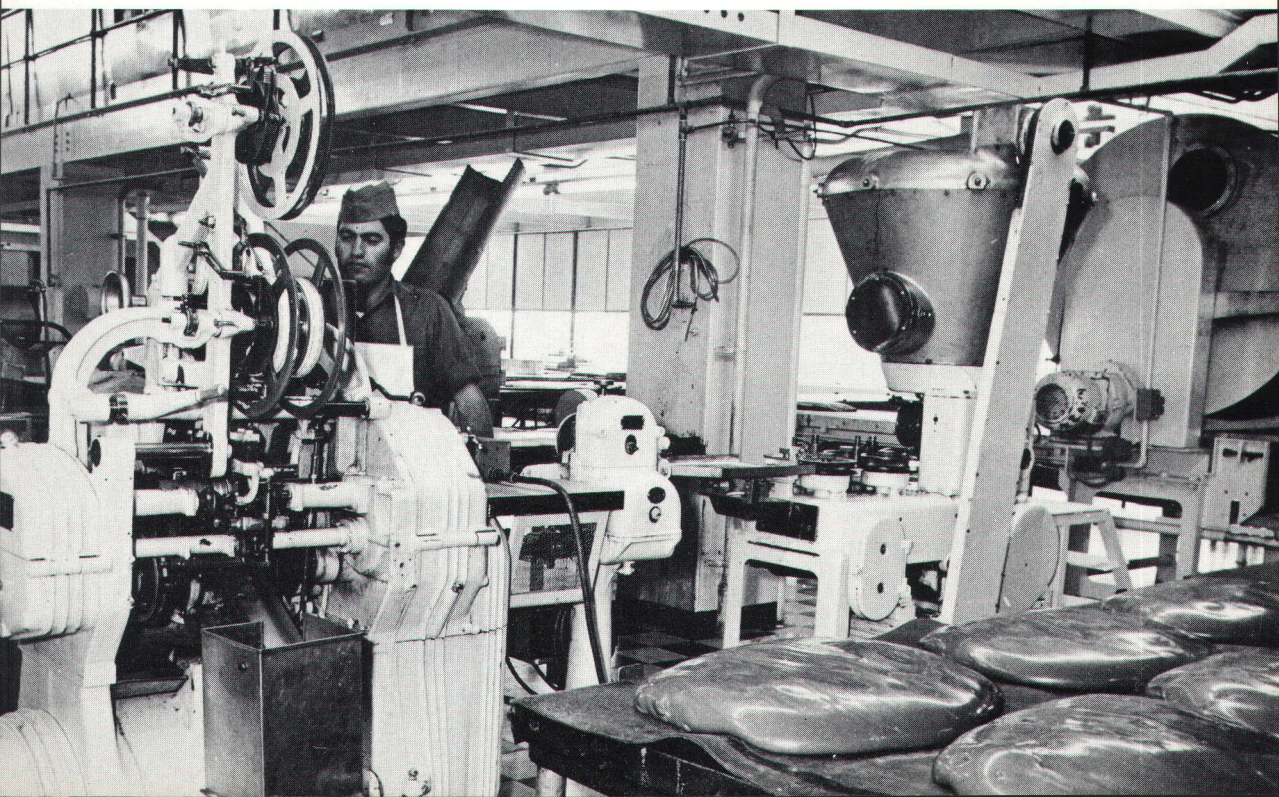


Chocolate refining rollers

(Cadbury Schweppes)

Caramel toffee manufacturing

(Cadbury Schweppes)





Cadbury-Schweppes confectionery manufacturing plant, Claremont

(Cadbury Schweppes)

Chocolate packing line

(Cadbury Schweppes)



In the above definition, all other operating income *includes* commission, repair and servicing revenue but *excludes* rents, leasing revenue, interest (other than from hire purchase), royalties and receipts from the sale of fixed tangible assets.

Purchases and Selected Expenses

Purchases and Selected Expenses: *Equal* Purchases and transfers in of materials, electricity, fuels, containers, etc.;

Plus Purchases and transfers in of goods for resale;

Plus Charges for commission and sub-contract work;

Plus Repair and maintenance expenses;

Plus Outward freight and cartage, motor vehicle running expenses and sales commission payments.

Value Added

The Value Added: *Equals* value of turnover;

Plus increase (or *less* decrease) in stocks;

Less purchases and selected expenses.

Value added is the appropriate measure for comparing various industries and can be added for groups of industries without there being any possibility of duplication.

Transfers

In the previous definitions, the terms 'transfers in' and 'transfers out' occur. The transactions refer exclusively to transfers between establishments of the same enterprise.

Preliminary Results 1968-69

The tables that follow give preliminary results for the 1968-69 manufacturing census. The results are subject to revision because: (i) the splitting of locations has not been completed; (ii) detailed industry classification has not been carried out; (iii) transfers between establishments have still to be adjusted to obtain consistent values; and (iv) two elements have not been taken into the calculation of turnover, namely bounties and subsidies, and capital work done for own use, or for rental or lease. Because of this last fact, the term 'turnover' is not used in the tables, the substitute being 'Sales, transfers out and other operating revenue'.

Non-comparability

Direct comparisons with figures for previous years are not possible because of changes in the census units, the scope of the census and the items of data.

Attention is called to one major change in scope, namely the exclusion of electricity and gas production; in tables for previous years this sector appeared as Class XVI Heat, Light and Power. Details of establishments classified to this sector appear in the next section of this chapter. 'Value added' in the tables that follow is conceptually allied to the old 'Value of Production' but the difference in definition prevents direct comparison between 1968-69 figures and those for previous years.

Census of Manufacturing Establishments, 1968-69
Preliminary Summary of Operations by Industry Sub-Division

Industry Sub-Division	ASIC Code (a)	Establishments Operating	Persons Employed (b)			Wages and Salaries
			Males	Females	Total	
		no.	no.	no.	no.	\$m
Food, beverages and tobacco ..	21, 22	216	4,687	2,496	7,183	19.2
Textiles; Clothing and footwear ..	23, 24	26	1,799	2,123	3,922	9.4
Wood, wood products and furniture ..	25	461	4,320	307	4,627	11.3
Paper and paper products, printing ..	26	55	4,814	1,038	5,852	20.4
Chemical, petroleum and coal products ..	27	14	1,303	80	1,383	5.0
Non-metallic mineral products ..	28	60	1,239	87	1,326	4.2
Basic metal products ..	29	10	3,897	141	4,038	15.5
Transport equipment ..	32	28	1,076	170	1,246	3.5
Fabricated metal products; Other machinery and equipment ..	31, 33	153	2,369	402	2,771	7.4
Miscellaneous manufacturing ..	34	16	101	16	117	0.3
Total Manufacturing ..	..	1,039	25,605	6,860	32,465	96.1

Preliminary Summary—continued

Industry Sub-Division	ASIC Code (a)	Sales, Transfers Out and Other Operating Revenue	Stocks at 30 June		Purchases, Transfers In and Selected Expenses	Value Added
			1968	1969		
		\$m	\$m	\$m	\$m	\$m
Food, beverages and tobacco ..	21, 22	127.5	21.1	22.5	90.1	38.8
Textiles; Clothing and footwear ..	23, 24	36.7	15.8	15.9	19.2	17.6
Wood, wood products and furniture ..	25	51.9	11.5	12.1	29.9	22.6
Paper and paper products, printing ..	26	92.5	12.9	13.9	46.8	46.7
Chemical, petroleum and coal products ..	27	24.3	5.8	5.9	13.3	11.1
Non-metallic mineral products ..	28	17.4	2.1	2.4	8.9	8.8
Basic metal products ..	29	116.8	18.2	25.4	83.9	40.1
Transport equipment ..	32	8.9	2.1	2.3	4.2	4.9
Fabricated metal products; Other machinery and equipment ..	31, 33	29.5	5.9	6.0	16.3	13.2
Miscellaneous manufacturing ..	34	0.6	0.2	0.3	0.3	0.5
Total Manufacturing ..	..	506.1	95.6	106.7	312.8	204.4

(a) Australian Standard Industrial Classification number.

(b) At last pay period in June. Includes working proprietors.

Tasmania in Comparision with Other Australian States

A comparison of Tasmanian manufacturing activity with that of the other Australian States is shown in the following table. Applying the appropriate population relativity factors to the Tasmanian figures, it will be seen that, on most indicators Tasmania is relatively more industrialised than Queensland, Western Australia, Northern Territory and the Australian Capital Territory and approaches the level of South Australia.

Tasmanian—Australian Comparison of Manufacturing Activity, 1968-69

State	Population Rela- tivity (a)	Estab- lish- ments	Wages and Salaries	Sales, etc. (b)	Stocks at 30 June		Pur- chases, etc. (c)	Value Added
					1968	1969		
		no.	\$m	\$m	\$m	\$m	\$m	\$m
N.S.W. ..	11.5	14,805	1,658	7,623	1,274	1,364	4,587	3,126
Vic. ..	8.7	12,487	1,381	6,658	1,184	1,263	4,162	2,575
Qld ..	4.5	4,314	317	1,928	241	260	1,282	664
S.A. ..	2.9	3,224	345	1,614	278	308	1,004	640
W.A. ..	2.4	2,774	186	968	126	141	625	357
Tasmania ..	1.0	1,039	96	506	96	107	313	204
N.T. ..	0.2	75	4	23	2	2	14	9
A.C.T. ..	0.3	116	9	31	3	4	17	15
Total Australia	31.5	38,834	3,996	19,351	3,204	3,449	12,004	7,590

(a) Tasmania's total mean population for 1968-69 is expressed as 1.0; other State populations in proportion to 1.0.

(b) Sales, transfers out and other operating revenue.

(c) Purchases, transfers in and selected expenses.

CENSUS OF ELECTRICITY AND GAS ESTABLISHMENTS, 1968-69

Introduction

In the section of this chapter headed 'Factory Statistics, Prior to 1968-69', the tables analysing factory production by industry include Class XVI (Heat, Light and Power); in the 'old style' annual factory censuses, of which the last covered 1967-68, this class was confined to the *production* of electricity and gas and such operations were treated as a particular type of factory activity. The year 1968-69 was covered by five simultaneous economic censuses, comprising: (i) manufacturing; (ii) electricity and gas production and distribution; (iii) mining; (iv) wholesale trade; and (v) retail trade.

The integrated economic censuses, 1968-69 are fully described in Appendix A in which there is also an explanation of the factors which made it necessary to end the 'old style' censuses and to start the new series, based on new reporting unit and data concepts. In this section it is intended to give the *preliminary results* of the 1968-69 electricity and gas establishments census for Tasmania, to point out differences between the old-style and new-style censuses, but not to discuss reasons for the changes (these are set out in Appendix A).

Definition of Electricity and Gas Establishments

In the previous section, 'Census of Manufacturing Establishments, 1968-69', appears the new definition of the establishment: '... the basic census unit, in general, now covers all the operations carried on under the one ownership at a single physical location.'

Special Exception

For electricity and gas, the basic census unit is an *exception* to the above general concept of the standardised unit. The nature of the activities of electricity and gas undertakings, makes the single operating location basis unsuitable. In the Tasmanian situation, for example, the householder paying a

bill for power may draw his electricity from any combination of 20 or so stations in an integrated grid; in brief, individual stations do not record 'Sales' which are necessarily credited to the grid as a whole.

The special establishment unit in this census consists of *all locations*, including administrative offices and ancillary units, mainly concerned with the production and/or distribution of electricity or gas, operated by the one undertaking in the one State.

Effects of New Classification

The use of the above new definition is one of the reasons for the number of electricity and gas establishments in 1968-69 being considerably less than in previous years. A second cause is the exclusion in 1968-69 of some generating stations operated by enterprises for their own use (only if their value of sales and transfers of electricity exceeded \$100,000 were such stations included in the electricity census).

New Data Concepts

It should be stressed that pre-1968-69 figures for the 'Heat, Light and Power' Class of industry referred only to production; from 1968-69, the electricity and gas census covers not just production but also distribution.

The new data concepts introduced in the 1968-69 census are set out in the previous section of this chapter (Census of Manufacturing Establishments, 1968-69) and the items and definitions are those used also in the electricity and gas census.

Preliminary Results 1968-69

Two elements have not been taken into the calculation of turnover, namely bounties and subsidies, and capital work done for own use, rental or lease. Because of this fact, the term 'turnover' is not used in the tables, the substitute being 'Sales, transfers out and other operating revenue'. Direct comparisons with figures for previous years are not possible because of changes in the census units, the scope of the census and the items of data.

Census of Electricity and Gas Establishments (a), 1968-69: Preliminary Summary

Particulars								Total
Establishments Operating During 1968-69	..	..	no.					5
Persons Employed (b)—								
Males	..	..	..	..	..	..	..	2,450
Females	..	..	..	..	..	..	..	194
Persons	..	..	..	..	..	..	..	2,644
Wages and Salaries	..	..	..	..	..	..	\$m	10.6
Sales, Transfers Out and Other Operating Revenue	..	..	..	..	..	..	..	34.8
Stocks at 30 June—								
1968	..	..	..	..	..	..	..	5.1
1969	..	..	..	..	..	..	..	4.7
Purchases, Transfers in and Selected Expenses	..	..	..	..	..	..	..	0.9
Value Added	..	..	..	..	..	..	..	33.5

(a) Establishments producing and/or distributing. See special definition of *establishment* in preceding text.

(b) At last pay period in June.

The following table gives a comparison between Tasmania and the other Australian States. Applying the appropriate population relativity factors to Tasmanian figures it can be seen that Tasmania compares favourably on most indicators.

Tasmanian-Australian Comparison of Census of Electricity and Gas Establishments
(a) 1968-69

State (b)	Popula- tion Rela- tivity	Estab- lish- ments	Persons Em- ployed	Wages and Salaries	Sales, etc. (c)	Stocks at 30 June		Pur- chases, etc. (d)	Value Added
						1968	1969		
		no.	no.	\$m	\$m	\$m	\$m	\$m	\$m
N.S.W. ..	11.5	86	29,697	119.9	549.5	43.1	48.2	287.2	266.4
Vic. ..	8.7	22	19,834	80.2	321.6	26.5	27.8	103.8	219.1
Qld ..	4.5	28	7,884	28.3	141.2	10.3	11.5	61.8	80.6
S.A. ..	2.9	19	6,612	24.8	76.2	6.2	6.7	30.0	46.7
W.A. ..	2.4	58	3,711	12.5	48.2	5.0	6.0	15.0	34.2
Tasmania ..	1.0	5	2,644	10.6	34.8	5.1	4.7	0.9	33.5
Total Australia ..	31.0	224	71,140	279.3	1,185.0	97.9	106.6	505.2	588.5

(a) Establishments producing and/or distributing See special definition of *establishment* in preceding text.

(b) In some States electricity is produced by undertakings other than those which distribute it. In these States sales of electricity are duplicated due to the inclusion of bulk sales to distributors in addition to retail sales. Sales figures for N.T. and the A.C.T. are not available for publication; therefore the Territories have been included only in the total.

(c) Sales, transfers out and other operating revenue.

(d) Purchases, transfers in and selected expenses.

INDUSTRIAL GROWTH SINCE 1945

Source of Data

In normal circumstances, the Bureau of Census and Statistics does not publish information relating to any single enterprise or establishment, and regards any information it collects as strictly confidential. It does, however, publish statistical aggregates where they do not reveal the operations of any single informant.

A description of industrial growth without mentioning individual organisations is not very illuminating; therefore the *State Directorate of Industrial Development and Trade* has prepared the following section and accepts responsibility for the information given, while in the section describing 'State Industries' the firms included have provided the information published.

Primary-Secondary Relativity

Prior to World War II, there were few large manufacturing establishments in Tasmania. The economy of the State was dominated by primary industries which, in 1938-39, accounted for 60 per cent of the net value of production of all recorded industries.

By today's criteria, pre-war operations of manufacturing establishments were on a small scale but some enterprises have since emerged as national leaders in particular fields. Despite the limitations of geographical isolation and a relatively small domestic market, the State has been going through a period of important industrial development since World War II; the cessation of hostilities released a world-wide demand for goods and services, and a number of new Tasmanian factories were established to take advantage of the situation.

Post-war expansion of factory activity has made the State an important supplier of manufactured goods and processed materials. Major factories which have been established since World War II include producers of chemicals, wood pulp, textiles, processed foods and industrial equipment.

Tasmania as a Site for Industry

The State has certain advantages which have attracted new industrial enterprises. The principal factors are:

Hydro-Electric Power: This is fully described elsewhere in this chapter and it is therefore sufficient to mention the need of power-intensive industries for cheap bulk electricity (e.g. in metal smelting and refining, heavy chemicals, paper and paper pulp making). The State supply is based on hydro-electric generation, and its capacity is being continuously increased. Rates charged to industrial consumers compare very favourably with those in other Australian systems based principally on thermal generation.

Water Resources: In some parts of the world, water resources are inadequate; shortage of water and the high cost of conservation, re-use and 'purification' have become major problems in the expansion of industry. This is definitely not the situation in Tasmania where water is abundant. The terrain favours the economical construction of high-level storages, while run-of-the-river pumping schemes are feasible at many sites.

Industrial Land, Harbours and Shipping: Cheap land, and its proximity to deep-sea ports, are factors influencing the expansion of industry in the four main centres of population: Hobart, Launceston, Burnie and Devonport.

The associated ports are served by overseas ships and by interstate ships using modern roll-on roll-off and containerised cargo techniques.

Legislation and Government Assistance: The policy of the State Government is to promote the establishment and growth of secondary industries in Tasmania, as provided by the *Industrial Development Act 1954*. This Act is administered by the Director of Industrial Development and Trade under the Minister for Housing, Industrial Development and Sea Fisheries.

The Directorate gives advice, information and assistance on a wide range of important industrial matters, and is empowered to provide financial assistance, including loan guarantees, with the object of helping establish new industries or expanding those in operation.

In common with manufacturers in other Australian States, Tasmanian manufacturers may be granted tariff protection by the Commonwealth, the policy being to assist efficient producers to compete with those in other countries.

Major New Factories Since 1945

The following lists some of the major factories established in the post-war years:

Gordon Edgell Pty Ltd (Ulverstone and Devonport): A subsidiary of Petersville Australia Ltd, Gordon Edgell Pty Ltd operates two processing plants which have made Tasmania a major producer of processed peas and potatoes.

Stanley Works Pty Ltd (Moonah): This company was incorporated in 1963 and is jointly owned by the Stanley Works, United States of America, and the Titan Manufacturing Company Pty Ltd (a B.H.P. subsidiary). The Australian member of the new company, Titan Manufacturing Company, commenced

operations in Hobart making nails and barbed wire in 1943, diversifying to produce wood chisels in 1945. Stanley Works Pty Ltd now produces a wide range of hand tools.

Universal Textiles Australia Ltd (Derwent Park): Operations commenced in 1947; the processes include the weaving, dyeing, printing and finishing of silk, nylon, terylene, rayon and cotton. The company is now part of the Textile Division of the Dunlop Australia Group of Companies.

Australian Titan Products Pty Ltd (Burnie): Production of titanium oxide (rutile) pigments began in 1949; plant capacity has risen from an initial 1,800 tons to 25,000 tons per annum.

Murex (A/sia) Pty Ltd (Derwent Park): Incorporated in 1950 with a 50 per cent interest held by Murex Welding Processes Ltd (U.K.) to manufacture and distribute a wide range of arc welding materials and equipment. The company is now a subsidiary of Commonwealth Industrial Gases Ltd.

James Nelson (Aust.) Pty Ltd (Launceston): Established in 1951 with 150 looms, the mill has since been expanded to over 330 looms for weaving all types of fabrics from man-made fibres. The company is now a member of the Courtauld's Group.

Tootal of Australia (A division of English Sewing Ltd) (Devonport): First operations in 1952 used piece-goods imported from the U.K. to make textiles. In 1955, plant capacity was increased to include the weaving, dyeing and finishing of locally-produced fabrics; additional high-speed weaving machines were installed in 1968 and 1971.

Comalco Aluminium (Bell Bay) Ltd: The production of aluminium commenced in 1955 at a plant erected with Commonwealth Government funds (with State Government participation). The present company was formed in 1960 to buy out the Commonwealth's interest. Production capacity has grown from 13,000 to 94,000 tons of primary aluminium a year.

Comalco Aluminium Powder Pty Ltd (Bell Bay): This plant was established in 1968 to produce aluminium powder and paste.

Tasman Scottish Carpet Manufacturing Pty Ltd (E. Devonport): The first piece of Tasmanian carpet was woven in 1961. Since then a spinning and dyeing plant has been installed (1965) and additional looms have been progressively introduced.

Kraft Foods Ltd (Scottsdale): Kraft Foods Ltd acquired Dewcrisp Products Ltd, manufacturers of dehydrated vegetables and frozen and canned peas in 1961. Commencing in 1964, a long-range expansion programme, based on the manufacture of instant mashed potatoes, was introduced.

Australian Paper Manufacturers Ltd (Port Huon): Production began in 1963 with an initial capacity of 25,000 tons of pelletised wood pulp per annum; capacity has now been lifted to 75,000 tons.

Tasmanian Electro Metallurgical Co. Pty Ltd (Bell Bay): The Broken Hill Co. Pty Ltd established a plant in 1962 to produce high carbon ferro-manganese for the Australian steel industry, with an initial annual output of 26,000 tons. Production capacity is now approximately 75,000 tons of manganese alloys per year.

Alginates (Aust.) Co. (Orford): Operations commenced in 1964, using a special process for extracting sodium alginate from sea kelp. Alginate is a colloid agent, used in film forming, jelling, stabilising, suspending and emulsifying processes. The kelp is obtained from the eastern shoreline in specially designed barges.

Savage River Mines (Pickands Mather and Co. International, Managing Agent): Established at a cost of \$70m, the iron ore pelletising plant commenced operation in 1968. Following recent expansion, production is expected to reach 2,500,000 tons of pellets per year. The entire production is sold to Japanese steel mills.

North-West Acid Pty Ltd (Burnie): Established in 1970 to process iron pyrites from the West Coast, the plant has an annual production capacity of some 420,000 tons of sulphuric acid.

Repcos Bearing Company Pty Ltd (Launceston): In 1949, this company was established to manufacture engine bearings for the Australian automotive spare parts trade. The factory has since expanded and diversified the range of products.

Recent Developments

Expansion has also been evident in many other fields of manufacturing, including the production of: air cushion vehicles (Air Cushion Vehicles A/asia Pty Ltd); furniture (Furniture Makers of Australia Pty Ltd, Kerby (Tas.) Pty Ltd, Namco Industries (Tas.), Nu-Steel Furniture Pty Ltd, Top Form Furniture Industries, Tru-Line Productions Pty Ltd); dairy products (Duck River Co-op Butter Factory Co. Ltd, Lactos Pty Ltd, The North-Western Co-op Dairy Co. Ltd, The Table Cape Butter and Bacon Factory Ltd); plastic products (Nylex Corporation Ltd, Gay-Dor Plastics Ltd); apple juice (Cascade Cordials Pty Ltd, Port Huon Juices Pty Ltd); printing (Mercury-Walch Pty Ltd); seafoods (Mercury Seafoods, Safcol (Tas.)); and corrugated fibre containers (Tasmanian Containers Pty Ltd).

Other new products which have been added recently to the range of goods manufactured in Tasmania include: bottles, jars and glass containers; domestic electric appliances; fibre-board shipping containers; mattresses; demountable aluminium office partitions; transport equipment; multi-wall paper bags; tubes for paper, building and textile industries; hot bitumen and bituminous emulsions; explosives; roofing material; malt products; anhydrous milk fat; casein; long-keeping milk treated by an ultra-heat process; and corrosion-resistant materials and paint.

Expansion of Established Industries

Growth of long-established industries has played an important part in the expansion of manufacturing activity in Tasmania. Examples are:

Australian Newsprint Mills Ltd (Boyer): The first paper machine, with a 27,000 ton capacity per annum, began operating in 1941; a second machine, installed after the war, increased capacity to 94,000 tons of newsprint per annum; the third machine was commissioned in 1969. The company is now producing 165,000 tons of newsprint annually, providing about 45 per cent of Australia's newsprint requirements and is the nation's sole newsprint producer. A.N.M. Ltd plans to increase annual production by a further 40,000 tons by 1972.

Associated Pulp and Paper Mills Ltd (Burnie): Paper manufacturing capacity has increased from an initial 14,000 tons per annum in 1938 to 119,000 tons at present; the company has become Australia's largest manufacturer of fine papers, and has subsidiaries making specialty papers, hard board and particle board and producing sawn timber. At Wesley Vale, seven miles east of Devonport, the company has completed a \$24m pulp and paper mill as the first stage of an integrated pulp and paper complex.

Cadbury Schweppes Australia Ltd (Claremont): In 1921, an association of three British confectioners established their Australian plant at Claremont, near Hobart. Today, the plant is the largest cocoa and confectionery factory in Australia. Following a takeover in 1967, *MacRobertson (Australia) Ltd* is now a subsidiary of Cadbury Schweppes Australia Ltd. Total staff at Claremont numbers 1,400 and the annual value of output is \$30m which is nearly three-quarters of the total output of the company in Australia. The activities of the company are described later in this chapter.

Electrolytic Zinc Company of Asia Ltd (Risdon): Established in 1916, the factory at Risdon is now one of the largest electrolytic zinc plants in the world. Production facilities have been expanded in recent years and the factory now produces zinc and zinc alloys, cadmium, sulphuric acid, superphosphate, sulphate of ammonia and aluminium sulphate. The company is currently carrying out large-scale mine and production plant expansion.

Production of the company's principal metal—refined zinc—has doubled since 1944-45, output in 1970-71 reaching 159,708 tons. The zinc plant supplies a large proportion of Australia's total requirements.

Goliath Portland Cement Company Ltd (Railton): Formed in 1928 to take over a small plant, the company began production in 1930 with an output of 65,000 tons of cement a year. Annual production capacity increased to 100,000 tons by the end of the decade and was 200,000 tons by 1956. Plant expansion in 1967 lifted production capacity to over 500,000 tons a year. A fully automated cement mill was commissioned in 1970.

Kelsall and Kemp (Tas.) Ltd (Launceston): From small beginnings in 1921, the company has become a leading producer of woven fabrics in the Australian textile industry.

Coats Patons (Aust.) Ltd (Launceston and George Town): This company first produced yarns in Launceston in 1923 with a staff of 130. Steady expansion followed, involving expenditure of more than \$7m in recent years, and the company now employs about 1,900 at its Launceston and George Town mills.

A. Wander (Aust.) Pty Ltd (Quoiba): Established in Tasmania in 1941, the Quoiba unit has become one of the largest 'Ovaltine' factories in the world. The factory is equipped to manufacture all types of malt extract to specification, as well as a range of dietetic products.

Current Expansion Projects

The development of a Tasmanian woodchip industry has resulted in the construction of two major chipping plants by:

(i) *Tasmanian Pulp and Forest Holdings Ltd (Triabunna)*: Export of woodchips commenced in 1971. Shipment of woodchips is expected to increase to an anticipated peak level of 600,000 tons per year.

(ii) *Associated Pulp and Paper Mills Ltd (Tamar)*: The company is to invest \$7 million in bulk loading facilities and chipping plant at Long Reach in the Tamar Valley. When fully operational the plant will be exporting 600,000 tons of woodchips per year.

A more detailed discussion of the 'Tasmanian Woodchip Industry' appeared in the 1971 *Year Book*.

SELECTED TASMANIAN INDUSTRIES

The following account of Tasmanian manufacturing activities and food science research has been prepared from information made available by the companies concerned and the Armed Forces Food Science Establishment, Scottsdale.

CADBURY SCHWEPPE'S AUSTRALIA LIMITED

Introduction

Cadbury Schweppes Australia Limited is one of the largest food and drink manufacturers in Australia. Formed in 1971 with the merger of two companies, Cadbury Fry Pascall Australia Limited and Schweppes (Australia) Limited, the company has its head office at Ringwood (Victoria) and chief manufacturing unit at Claremont, a northern suburb of Hobart.

The Claremont manufacturing plant is a significant contributor to the Tasmanian economy, being a major income earner and one of the largest employers of labour in the south of the State.

Tasmanian Operations

Following the purchase of 246 acres of land at Claremont in 1920 plant construction began in 1921. Production commenced early in 1922 and has been steadily increased to meet the growing demands of the Australian market.

The peninsula location, surrounded on three sides by the River Derwent, was chosen because ideal factors existed there for the manufacture of chocolate, confectionery and food drinks. Labour and hydro-electric power were readily available within the State and raw materials could be imported through the first class port facilities offered by Hobart. In addition the temperate climate was admirably suitable to the manufacture of chocolate.

Products

The average annual consumption of chocolate and confectionery in Australia is 18.7 lbs per head as compared with 25.1 lbs in the United Kingdom and 19.6 lbs in the U.S.A.

Cadbury Schweppes Australia is a major supplier of the Australian market. In addition to producing chocolate and sugar confectionery the Claremont output includes other well-known products, such as Bournville Cocoa, Bournvita, Drinking Chocolate, Fry's Chocolates, Pascall sweets and some MacRobertson lines. During 1971, a programme of rationalisation between Claremont and Ringwood was started to ensure that the most effective use is made of manufacturing facilities. In order to make full use of the differing skills at the two plants, a number of chocolate and sugar confectionery lines formerly manufactured by MacRobertson were transferred to Claremont, and the manufacture of some lines, particularly those with high freight costs, was transferred from Claremont to Ringwood.

Processes

Raw Materials

The three chief raw materials used at Claremont come from widely differing sources: cocoa beans from the East Coast of Africa and New Guinea; sugar supplies from refineries in other Australian States; and full cream milk from the North West Coast of Tasmania.

Production of Cocoa Mass

The greater part of the production cycle is the processing of cocoa beans. The production of cocoa and milk and dark chocolate depends on the quantity of 'cocoa mass' obtained from cocoa beans. The cocoa beans arrive at the factory in 140 lb bags which are stored, possibly for months, protected against excessive humidity and rodent or insect infestation. The greater part of the beans used at Claremont are the Forastero type from Ghana while lesser amounts of Hybrid Criollo beans from New Guinea are occasionally used. The blending of the beans occurs when the bags are emptied into a bulk weighing bin at the start of the production process. The blended beans are automatically weighed and then cleaned by passing over magnets, vibrating screens and air separators to remove contaminants.

Roasters: The cleaned beans are then roasted in indirectly oil-fired, rotating drums to facilitate the removal of the shell from the nib (kernel) and to assist in the development of flavour and colour. Volatile acid content and the astringency are reduced and the moisture content lowered. The colour changes to a deeper and richer brown.

Winnowing: After roasting, the beans are cooled; kibbled (cracked) by passing through toothed rollers, and then passed through winnowing machines to remove the shell from the nib. The winnowing machines direct air blasts onto the broken beans to blow the pieces of shell away from the nib portions.

The shell, which accounts for ten to twelve per cent of the bean, is unpalatable, but has a by-product use in fertilisers and soil conditioners.

Grinding: The nib is a cellular mass containing about 55 per cent fat (cocoa butter) locked within the cell structure. To release the cocoa butter the cellular mass is ground and the fat liquified by the frictional heat. This becomes a continuous phase with the disintegrated cell particles suspended in the cocoa butter. As disintegration proceeds, more and more fat is liberated, reducing the viscosity of the paste until it becomes the fluid which is referred to as 'cocoa mass'. The grinding machines have steel discs mounted vertically, with a central steel disc rotating at high speed between two stationary steel faces, all of which are suitably grooved. The nib is fed to the centre of the discs and collected at the outer edge. The grinding operation generates considerable heat and water cooling is provided to absorb this.

Cocoa Powder Production

Cocoa powder is produced from cocoa mass by removing a proportion of the cocoa butter (fat) in the cocoa mass by hydraulic pressing. This yields a hard cake of cocoa which is pulverised to produce cocoa powder. The amount of cocoa butter extracted is carefully controlled and the amount remaining in the cake is regulated by: (i) the length of time and degree of pressing; (ii) the temperature of the mass; and (iii) the characteristics of the press.

The press used at Claremont is a largely automatic horizontal type. It consists of twelve pots in a horizontal frame, each with a steel filter screen backed by a pot plate. The pots are filled by a pressure of 6,000 pounds per square inch applied by a hydraulic ram. At the end of the cycle, the ram

is reversed, the pots are opened and the cocoa cakes ejected. The expressed cocoa butter contains some fine cocoa solids in suspension which are removed by a plate filter press. The solids are removed to prevent them settling and causing clogging problems in pipelines or holding tanks.

The cocoa cakes are pulverised, first roughly and then into a fine powder in hammer mills (supplied with cold dry air which is freed from the powder in cyclones).

Various additives are mixed with the cocoa powder which is then packaged for sale.

The two main products produced by this method are: Drinking Chocolate which is sweetened cocoa powder; and Bournvita, a blend of cocoa powder with sugar, milk, malt extract and glucose additives.

Chocolate Production

The characteristics of chocolate: firmness; an attractive break or 'snap' at normal temperatures; and its ability to melt and dissolve in the mouth without any sensation of waxiness; are due largely to the physical nature of the cocoa butter.

One requirement of chocolate is that it should give no sensation of roughness when eaten. This fineness is achieved by grinding the chocolate on a rolling machine consisting of five water-cooled hollow steel rollers. As the surface area of the solids increases during grinding it is necessary to add extra fat (cocoa butter) to restore the fluidity of the paste.

Dark Chocolate: Essentially a finely ground mixture of cocoa mass and sugar, dark chocolate has sufficient cocoa butter added to enable it to set in block form when moulded, or as a firm shell on confectionery centres when used for covering.

Milk Chocolate: The addition of milk during manufacture produces milk chocolate, which is much milder and softer in texture than dark chocolate due to the presence of milk fat, which melts at a lower temperature.

For milk chocolate production, practically all water content must be removed from the milk before the refining stage. The milk is brought to Claremont in concentrated form, by road tankers from the firm's milk concentrating plant at Burnie. Using the 'crumb' process, developed by Cadbury research chemists, the concentrated milk is condensed with sugar; the cocoa mass is incorporated; and the mixture dried under vacuum to a low moisture content. The 'crumb' product is broken down on peg mills and mixed with cocoa butter to form a paste. The paste is then fed to refiners and passes through the same production process as for dark chocolate.

Conching: After grinding, all chocolate, whether dark or milk, undergoes a treatment known as 'conching' (so called from the shell-like shape of the original machines). Those in use at Claremont are longitudinal tanks, with a granite bed on which the chocolate is pushed to and fro by a roller. The end of the conche is so shaped that the chocolate forced against it is splashed over the roller and back into the body of the machine. The length of time of the conching process may vary from twelve hours or less for milk chocolate, to several days for the highest quality dark chocolate. During conching the temperature of the chocolate is higher for dark chocolate than for light. Viscosity is reduced during the early stages of conching.

The kneading action generates frictional heat, evaporating moisture and volatile acids (mainly acetic) and harsh flavours are removed. There is some absorption of oxygen and a reduction of astringency, probably due to the modification of tannins. The overall effect of conching is to give the chocolate a fuller and more homogeneous flavour. A general smoothing of texture is also attained though very little grinding is achieved by the conche compared with the refining rolls.

During conching significant 'natural' flavour development takes place. Changes of this nature are subtle, and the chemistry responsible for it is complex and incompletely understood.

Additional flavour is usually added towards the end of conching, as is extra cocoa butter, to adjust viscosity to the requirements of a particular use; for example, moulding, for covering confectionery centres, etc.

Tempering: Before chocolate can be used either as a covering or for moulding it is 'conditioned' by 'tempering' or 'graining'. The transition from liquid to solid, during the cooling stage of the moulding and enrobing, involves removal of both the sensible heat and the latent heat of crystallisation of the fat.

If the chocolate is to set rapidly and uniformly, with good colour and keeping properties, it is essential to 'seed' the cooled liquid chocolate with a multitude of fat crystals to provide nuclei for subsequent crystallisation. Usually the chocolate is cooled in a mixer with cold surface areas, the temperature of which is below the crystallisation point of cocoa butter. Crystals are continually being formed on the cold surfaces, scraped off and mixed with the remaining liquid supercooled chocolate. The temperature is steadily lowered until a point is reached when the chocolate is ready for moulding. Because of the presence of milk fat, milk chocolate requires cooling to a lower temperature than for dark chocolate to achieve the same result.

Moulding: For moulding solid blocks, tempered chocolate is automatically fed into pre-heated polished moulds, and carried under the depositor by a moving belt. Fruit, nuts and other ingredients, when required, are mixed before deposit into the moulds. The filled moulds are shaken to spread the chocolate evenly, and to release air bubbles, then passed through a cooler supplied with cold air (at carefully controlled temperatures) to facilitate reasonably rapid setting, and enhance appearance.

Solidification of the chocolate causes the block to contract and separate from the mould. The solid brick is discharged without difficulty, leaving the mould clean, and after warming, again ready for use.

Enrobing: For chocolate assortments and chocolate covered bars, confectionery centres and bars are fed into the 'enrober' on a wire net and conveyed through a shallow pool of chocolate to coat the bottoms, and then through a falling curtain of tempered chocolate. This flows continuously over the centres of the bars, the excess passing through the wire net into the tank of the enrober for recirculation. The weight of chocolate on the centres is controlled by shaking and blowing off the excess while the product is on the wire belt.

Chocolates are often decorated with characteristic marks by hand, by air blowing, or mechanically during this stage of production and the coated centres are transferred to moving embossed belts which provide an imprint on the bottom of the chocolate (often the manufacturer's name) and are conveyed on these through cooling tunnels. As with moulded blocks, controlled cooling is used.

Filled chocolate blocks are made on the continuous plant by first depositing tempered chocolate into moulds, tipping out the excess and cooling the remaining chocolate shell. The filling of either cream or syrup, is then deposited into the shell and cooled. Finally, the filling is covered with more chocolate and the whole block cooled.

Centres for chocolate assortments are made by depositing liquid cream, fudge, etc. into shallow depressions in starch-filled trays. The trays are stacked and the starch draws out some of the moisture from the cream centres, temporarily forming a dry surface area. When the centres are firm enough to handle they are tipped out and the starch brushed off. They are then passed through the enrober in the normal manner.

Sugar Confectionery

The general principle is to dissolve the sugar in boiling water held in steam-jacketed pans, add the other ingredients (such as milk, fats, nuts, fruits, salt and gelatine) cook and boil the mixture at a selected temperature, tip onto a cooling table and, when cool enough to handle, draw the mass into a 'rope'. The rope is then automatically shaped, cut into small pieces and wrapped.

Packaging

Packaging is concerned with both presenting the product in an attractive and appealing manner and in maintaining quality during shelf life. The ideal package gives protection against absorption or loss of moisture, absorption of foreign odours and against insect attack. It excludes light which can accelerate oxidation, and has sufficient mechanical strength to withstand the action of modern high speed packaging methods and of transport hazards. The packaging material itself must be free from any constituents which could adversely affect the product.

Cocoa, Drinking Chocolate and Bournvita are packed in printed cartons lined with bags of moisture-resisting film.

Chocolate blocks and bars are wrapped individually in aluminium foil and overwrapped with a colour printed paper band or label. Heat sealing foil is used where extra protection is required, with a second wrapping of glassine to prevent foil damage.

Unwrapped chocolate-coated assortments are often packed in boxes and cartons, using moulded plastic trays and cushioning pads of corrugated paper for protection against physical damage. The boxes are finally overwrapped with film. Alternatively, the individual units are wrapped in either printed foil or film, or both, and the plastic trays or corrugated paper dispensed with.

Sugar confectionery units are usually individually wrapped, often in waxed paper or cellophane, then put into cellophane bags with printed header labels. This form of packaging was pioneered at Claremont.

Employment

About 1,000 employees are directly engaged in product manufacture at Claremont, with another 350 concerned with associated activities such as production planning and engineering, buying and accounting.

A staff of 20, headed by an operations manager, runs the company's Concentrating Plant and Milk Depot at Burnie. This is now the focal point for regular year-round supplies of the 'rich full cream milk' which has become synonymous with Cadbury chocolate.

During 1969-70, a total of 128 dairy farmers, within a 35-mile radius of Burnie, supplied the Depot with 3,900,000 gallons of milk, compared with 2,600,000 gallons from the same area in 1959-60. Supplementary supplies are also obtained from other dairying areas as required.

Administration

The administrative head office of Cadbury Schweppes Australia Limited is located at Ringwood, Victoria. However some administrative functions have been retained in Tasmania as well as the company's computer centre. Claremont is the centre of accounting for the company, the computer centre covering the whole of Australia being located there. In 1967 the company installed an ICL 1902 computer as an aid to administration. A second computer, a Burroughs 2500 costing \$400,000, was installed at Claremont early in 1970 to provide for the increased needs of the company.

Capital Investment

The Claremont factory has expanded substantially since the Second World War, a major phase in this programme taking place during the 1960-70 decade. This expansion has lifted earlier capital investment (\$7.7m up to 1960) to a total of \$16.3m.

Ownership and Direction

Cadbury Schweppes Australia Limited is 29.4 per cent owned by the Australian public, with all remaining shares held by the parent company in the U.K.

Five of the eight directors, and the one alternate director, are Australian.

THE TEXTILE INDUSTRY IN TASMANIA

General

The textile industry is of major importance in the Tasmanian economy. In the period 1968-69 industry transfers of goods and sales were estimated to have had an annual value exceeding \$30m and in total the industry employed about 3,400 persons.

The following account of some of the State's larger textile firms was prepared from information supplied for publication by the companies concerned.

Waverley Woollen Mills

Waverley Woollen Mills, Tasmania's oldest established textile company, first manufactured woollen goods at its Distillery Creek factory, Waverley, in 1874. Later that year the company qualified for a £1,000 bonus from the colonial government for having manufactured the first £1,000 worth of all-Tasmanian woollen goods.

In 1877, products from the mill won medals at the Sydney Exhibition and this was followed by similar success at the Melbourne Exhibition in 1881.

The Distillery Creek factory was constructed by the partnership Bulman, Johnstone and Company, formed in Scotland in 1872. The partnership was dissolved in 1883 and for the following thirteen years the mill was operated by

Peter Bulman and Robert Hogarth who had operated a hand loom to produce the firm's first cloth. Hogarth became the sole proprietor after Bulman's death in 1896.

Power for the mill was originally obtained from a 25-foot water wheel using water piped from a dam on Distillery Creek. This was replaced by an American designed turbine; later the mill operated on power supplied by the Hydro-Electric Commission. Currently most of the mill's power requirements are met from diesel generating plant installed after the severe power restrictions in 1967.

The company's first woollen goods were produced on hand looms but these were soon replaced by more sophisticated machinery, power looms being installed in 1883, as were additional washing, carding and spinning machines. Various plant modifications have been undertaken since then, culminating in 1971 when the company completed the largest equipment installation in its 97-year history with the introduction of new carding and spinning equipment. Purchased at a cost of nearly \$200,000 the equipment will enable further product diversification.

Since World War II Waverley Woollen Mills has concentrated mainly on woollen blanket production although a wide range of products, including tweeds, flannels, shirting, shawls and rugs, has been manufactured since 1874.

In 1962 the company marketed two new products—electric blankets and tufted carpet. The carpet was produced on the first fine gauge tufting machine installed in Australia.

Employment at Waverley Woollen Mills has remained relatively static at about 150 persons over the past ten years; however, increased productivity has boosted output by about 40 per cent.

Kelsall and Kemp (Tasmania) Ltd

History and Development

A producer mainly of high fashion piece-goods, upholstery and drapery fabrics, knitted goods and blankets, Kelsall and Kemp (Tasmania) Ltd commenced manufacture in 1923 with production concentrated on flannels, suitings and tweeds.

Erection of the company's Launceston factory began in 1921 following a visit to Tasmania by directors of the parent company, Kelsall and Kemp, England.

The first products were closely allied to those manufactured by the parent company but the Tasmanian firm soon altered its range to concentrate more on blanket and flannelwear manufacture.

Changing market trends in recent years resulted in the company incorporating high fashion piece-goods, upholstery and drapery fabrics and knitted goods into its range of products.

In 1970 Kelsall and Kemp merged with the major textile group, Bonds Coats Patons, but continues to operate independently.

Development of piece dyeing techniques has made the company a leading specialist in this field. The methods used are three-colour dyeing of wool and man-made fibres, tie dyeing and the open fabric technique.

Three-colour Dyeing

This is a system devised at the Launceston plant which makes use of the differing effects of dye on various textiles. The technique enables production of a wider range of colour, within a certain pattern, than is possible with conventional methods.

Tie-dyeing

Tie-dyeing is reputed to have first been used thousands of years ago. The company has adapted the process for use with modern machinery but this still entails the fabric being bunched and tied; dyed; re-tied and dyed a different colour, essentially much the same technique as when the method was first invented. The process allows the dyeing of complicated patterns and the company uses it to manufacture a range of brightly coloured all-wool products.

Open Fabric Process

Wool and synthetic textile blended cloths are used in the open fabric process in which the synthetic material is dissolved to leave only the wool. A considerable number of patterns can be formed using this method.

Development

Since its establishment in 1923 Kelsall and Kemp has followed a long-term policy of continually updating plant and machinery. The company has recently completed installation of plant valued at \$250,000 including new knitting machines to supply roll fabric for fashion and furnishing goods.

Coats Patons (Australia) Ltd

Early History

Coats Patons, then Patons and Baldwins, manufacturers of hand and industrial knitting yarns was attracted to the Glen Dhu, Launceston, location because of the suitable climate (cool temperatures and humid air), cheap electric power, ready availability of labour and an assured supply of soft water.

Work on the factory site started in 1922 and by the end of the following year the mill, with 200,000 square feet floor area, was fully established. Within a short period extensions were necessary and in ten years (1922-32) the factory floor area increased 50 per cent.

During World War II the company worked full-time on government and military contracts but in the post-war period production of knitting yarns resumed.

Originally Coats Patons used only wool as raw material but now the company uses and produces substantial amounts of acrylic yarn; other natural and man-made fibre is used in smaller proportions.

Processes

The production of finished yarn from raw wool at the Launceston factory involves six major processes:

Scouring: After the fleeces have been sorted and blends prepared, the wool is scoured in tanks of hot, soapy water to remove dirt and grease. This process is repeated after spinning to remove industrial oil and dirt.

Carding: Once scoured the wool is dried and then carded on long rollers covered with wire-teeth which open out the fibres and remove most foreign matter such as burrs and grass seed. The wool is then formed into a continuous web similar to a sheet of wadding and passed on to the combing stage.

Combing: In this process the fibres are further straightened out and unwanted short fibres ('noil') are removed together with any remaining foreign matter.

Drawing: After combing, the wool is wound into a ball or 'top' and is then reduced in thickness by a series of drawing operations in preparation for spinning.

Spinning and Finishing: In the next operation the fibres are drawn out (or spun) between rollers until they resemble a thin sewing thread. This is then twisted together to obtain the required two, three or more ply yarns. The yarn is reeled into hanks which are finally scoured to remove industrial dirt and then dyed and moth-proofed.

The finished yarn is packed, labelled and distributed.

Products

Most of the company's principal products—hand and industrial knitting wools, orlon, mending embroidery and rug wools—are distributed by air although raw materials are generally shipped to the Launceston factory.

The Launceston mill has expanded considerably since 1922 and now covers some 650,000 square feet. Plant and machinery have been progressively modernised and since 1960 this has involved the expenditure of about \$7 million.

George Town Factory

A significant development in recent years has been the establishment in 1967 of a \$750,000 satellite factory at George Town for production of acrylic yarn. The majority of the raw material used at the George Town factory is orlon, purchased in filament form from the Du Pont Company of America. After a process involving drawing, roving, spinning, winding, twisting and reeling, the yarn is sent to the Launceston factory for dyeing, finishing and distribution.

Thyne Bros Pty Ltd

Thyne Bros Pty Ltd established a knitted outerwear factory in Launceston, in 1926, with a labour force of approximately 50 persons.

Early growth was limited by the depression but in 1938 the company installed a woollen spinning plant which enabled diversification of products to include knitted cellular blankets and a greater range of garments.

The company manufactured military clothing and blankets during World War II; blanket production being increased substantially in this period and during early post-war years.

Early in the 1950s the company began spinning lambswool yarns and manufacturing lambswool knitwear which initially were knitted on circular machinery and subsequently cut and sewn. By 1957, Thyne Bros had installed machinery to make fully fashioned knitwear and in succeeding years this was further augmented with more modern plant and machinery.

Currently the company's main products are lambswool and shetland-type clothing for adults and children.

Since the mid-1960s the company's overseas exports have dropped considerably, mainly due to substantially increased manufacturing costs. Currently more than 90 per cent of production is sold in the other Australian States.

Universal Textiles Australia Ltd

The Hobart manufacturing division of Universal Textiles Australia Ltd originated from a small textile printing factory established in Sydney in 1939.

In 1948 the factory was transferred to the Hobart industrial suburb of Glenorchy under the name of Silk and Textile Printers Pty Ltd. At Glenorchy the company erected a factory on its present fourteen acre site, more than half of which is now occupied by factory buildings and machinery.

Following a merger in 1966 with Tennyson Textiles the company became Universal Textiles Australia Ltd, one of the largest textile organisations in Australia. In 1969 the company was taken over by Dunlop Australia Limited.

Operating in what was originally a wartime munitions factory, the Universal Textiles Australia Ltd Glenorchy mill has four main activities. Textile weaving, screen printing and dyeing have been undertaken since the mill's inception; the fourth activity, manufacture of finished domestic furnishings, is a relatively new venture taken up in 1969.

Man-made fibre fabrics provide the bulk of the mill's annual output although a relatively small amount of pure silk and heavy cotton curtain material is also produced. Of the total annual production, about one-third is produced by the company's weaving unit.

James Nelson (Australia) Pty Ltd

The James Nelson (Australia) Pty Ltd Mowbray factory was established in 1951 to manufacture fabric from man-made fibres.

Since production first started in August 1951 the original plant of 150 looms and ancillary processing equipment has been completely replaced. The company now operates 330 fully automatic looms and associated equipment on a 24-hour, three shift system to produce about nine million square yards of fabric annually.

When the company was originally established the cellulosic fibres (acetate and rayon) made up the bulk of raw material used, with only minor amounts of nylon and terylene. Currently, the bulk of the company's fabric production is from nylon, terylene and acrylic yarns although cellulosic fibres are still used.

James Nelson (Australia) Ltd is a member of the Courtaulds organisation, one of the world's largest fibre producers.

Tasman Scottish Carpet Manufacturing Pty Ltd

This company commenced carpet production from its East Devonport factory in 1961.

The factory was established following a trade mission to the United Kingdom the previous year and within six months of site selection the factory was erected and production had commenced.

Originally dependent on outside suppliers for dyed yarn, the company installed its own woollen spinning and dyeing plant in 1965 and since then has installed broadlooms, dye vats and modern finishing machines.

A recent \$40,000 warehouse extension combined with the installation of storage and handling equipment valued at \$29,000 has increased the company's storage capacity to 85,000 square yards of finished carpeting. The company has also extended its administration section to accommodate new accounting and clerical facilities.

Annual plant capacity is about 400,000 square yards of carpet which is manufactured in 27-inch, nine-foot and twelve-foot widths with a wool/nylon pile.

Production from the nine and twelve-foot looms is marketed for domestic use while the 27-inch carpet is supplied for domestic and commercial installation.

ARMED FORCES FOOD SCIENCE ESTABLISHMENT

General

The Armed Forces Food Science Establishment at Scottsdale was set up in 1958 with the primary function of investigating and developing food dehydration and packaging techniques for use in service food rations.

Many of the techniques and developments pioneered by the A.F.F.S.E. have been adapted for commercial production of instant foods as well as providing the basis of various service ration packs for combat and emergency use.

The A.F.F.S.E. was located at Scottsdale because of the ready availability of most vegetables, the plant's main raw materials and the proximity of a large dehydration plant. It is staffed by about 40 civilians and Army personnel.

Research

Research undertaken at the Establishment is directed towards five main objectives, namely: (i) determining the caloric, nutrient and water requirements of servicemen under varying conditions; (ii) designing service ration scales and packs and producing prototype packs for testing; (iii) improving the stability and storage life of foods of particular importance to the armed forces; (iv) investigating new and improved methods of food packaging to meet service requirements; and (v) stimulating food industry interest in new lightweight and instant foods.

The Establishment which is one of only two outside the Soviet Union and Mainland China, works mainly on experimental and developmental projects, contracting commercial production to private firms. It also operates as an advisory and consultative body for Australian and overseas armed forces on all aspects of nutrition, food technology and packaging.

Ration pack ingredients are continuously tested in the laboratory and are exhaustively tested in user trials conducted mainly in Australia, New Zealand and South East Asia. An acceptability level of 90 per cent must be attained before new ingredients are included in ration packs i.e. 90 per cent of the user troops must be satisfied with an item before it is added to the range of rations available.

In addition to purely experimental and developmental work, limited production is undertaken at the Establishment. Material is manufactured for user trials and when only small quantities are required, making commercial production uneconomic, the production run is undertaken within the Establishment.

Dehydration Methods

The dehydration methods used at the Establishment are: (i) mechanical drying; (ii) freeze drying; (iii) belt trough drying; and (iv) 'explosive puffing' (a method similar to that used in production of puffed wheat or pop corn).

Mechanised Drying

Mechanised or air drying is a process in common use by commercial food processors. The material to be dehydrated is diced and placed on open-mesh wire trays which are passed through a heated chamber. The process is cyclic and can be operated continuously. Mechanised drying is relatively cheap but there are disadvantages when compared with other processes. The material does not retain its shape or structure and rehydration may take up to 20 minutes.

Belt Trough Drying

Material dried in this manner has similar disadvantages, the process being virtually the same as mechanical drying except that a moving belt is used in place of the wire trays.

Explosive Puffing

This method is mainly used to speed up the standard dehydration process. Semi-dehydrated material is placed in a 'cannon', superheated with steam and 'exploded' from the cannon under pressure. The puffed material may then be further dehydrated much faster than by the exclusive use of the conventional methods. Material treated by explosive puffing has the additional advantages of immediate rehydration and retention of shape, flavour and aroma.

Freeze Drying

The process is mainly used for meat dehydration for which many of the techniques in commercial use were pioneered by the A.F.F.S.E. Basically, the material to be dehydrated is frozen to a very low temperature and then placed in a vacuum chamber. When the chamber is evacuated the material loses its water content much the same as the way 'dry ice' is dissipated, straight from a solid to a gaseous state without becoming liquid (by sublimation).

Material processed by freeze drying is subject to less structural damage than occurs with other methods and retains its structure, flavour and aroma. Rehydration is instantaneous.

In 1971 the Establishment commissioned a new freeze drying unit capable of processing about 1,000 lb of meat a day. The unit will be used for experimental work and to produce rations for user trials.

Other Research

In addition to dehydration techniques the A.F.F.S.E. does research into food compression and packaging, nutritional and caloric characteristics and storage life.

This research has led to quality improvements in ration pack ingredients and improved packaging methods. Studies of the thermoplasticity of various dehydrated vegetables and other foods have resulted in successful compression enabling them to be included in lightweight ration packs.

Such items as apples can now be dehydrated and compressed to turn about one and a quarter pounds of fresh produce into a block smaller than a cigarette packet and weighing only two ounces.

Work at Scottsdale has resulted in a complete change in service ration packs, 'look', taste and acceptability being the criteria when new packs are being developed and in addition many of the technical developments have found increasing commercial application with the growth of the civilian market for pre-cooked dehydrated foods.

GOVERNMENT HYDRO-ELECTRIC POWER

Introduction

Until 1971 Tasmania was unique among Australian States in that its electric power system was based exclusively on hydro-electric installations. In 1971, a thermal oil-fired station commenced operations at Bell Bay opening a new phase in the development of the generating system. Other Australian States rely, in the main, on thermal plants while hydro-electric power, if available, is used only to supplement the basic supply. The Snowy River Hydro-Electric Scheme which feeds power to the Victorian and N.S.W. grids is not designed to cope with the base load demand in these two States, and its essential function is to provide the extra power necessary to meet peak loads, and also to supply irrigation water to the inland. The Tasmanian system, despite its lower installed capacity, produces more power than the Snowy Scheme.

The concentration on water as a source of power in Tasmania has resulted in the need to follow a policy of water conservation, even though the rainfall is usually adequate. Emphasis in the power developments has been on the creation of large storages and multiple use of the impounded waters e.g. water from Lake St Clair may pass through eight power stations before reaching the tidal waters of the Derwent River at New Norfolk.

Output and Capacity of Hydro-Electric System

The following table and graph outline the development of the Tasmanian generating system:

Tasmanian Power Generating System

Station	Year of Completion	Head (in feet)	Generator Capacity (kW) (a)	Average Annual Output (million kWh units)
COMPLETED STATIONS				
Waddamana 'B'	1949	1,127	48,000	(b)
Tarraleah	1951	981	90,000	593
Butlers Gorge	1951	184	12,200	63
Trevallyn	1955	415	80,000	541
Tungatinah	1956	1,005	125,000	560
Lake Echo	1956	568	32,400	76
Wayatinah	1957	203	38,250	274
Liapootah	1960	361	83,700	455
Catagunya	1962	142	48,000	260
Poatina	1965	2,720	250,000	1,322
Tods Corner	1966	136	1,600	13
Meadowbank	1967	95	40,000	209
Cluny	1967	51	17,000	105
Repulse	1968	88	28,000	160
Rowallan	1968	161	10,450	40
Lemonthyme	1969	523	51,000	286
Devils Gate	1969	226	60,000	300
Wilmot	1971	825	30,600	126
Bell Bay	1971	(c)	120,000	788
Cethana	1971	324	85,000	409
Total .. .. .	..	..	1,251,200	6,580

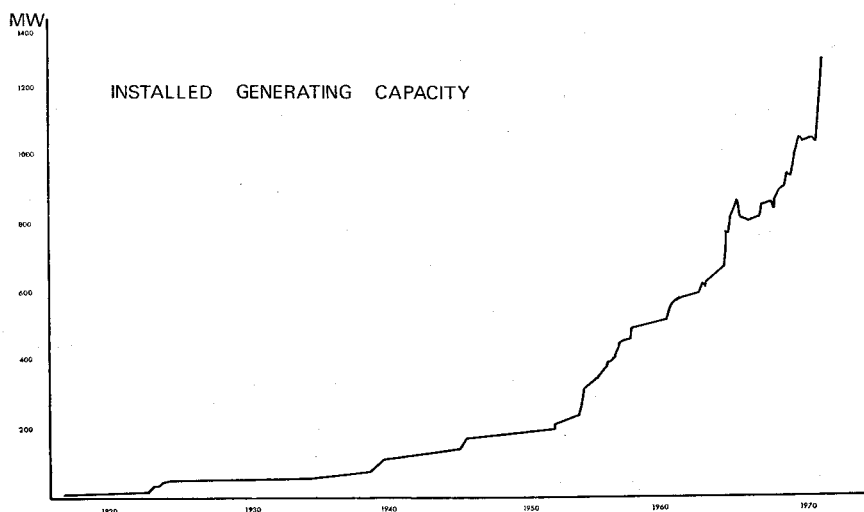
Tasmanian Power Generating System—*continued*

Station	Year of Completion	Head (in feet)	Generator Capacity (kW) (a)	Average Annual Output (million kWh units)
STATIONS UNDER CONSTRUCTION				
Paloona	1972	103	28,000	130
Fisher	1972	2,115	43,200	247
Bell Bay (Stage 2)	1974	(c)	120,000	739
Gordon (Stage 1)	1976	610	240,000	1,445
Total .. .. .	..	..	431,200	2,561
ALL STATIONS				
Grand Total .. .. .	..	..	1,682,400	9,141

(a) Emergency gas turbine generating capacity: 21,000 kW at Bell Bay; 10,000 kW at Macquarie Point (Hobart) not included.

(b) Reserve plant only.

(c) Thermal station.



Hydro-Electric Development

The evolution of hydro-electric power development in Tasmania has been extensively dealt with in preceding *Year Books*; the following is a synopsis of the more important features of previous articles.

Early Development

Hydro-electric power for public use was first introduced in 1895 with construction of the 450 kW *Duck Reach* station on the South Esk River near

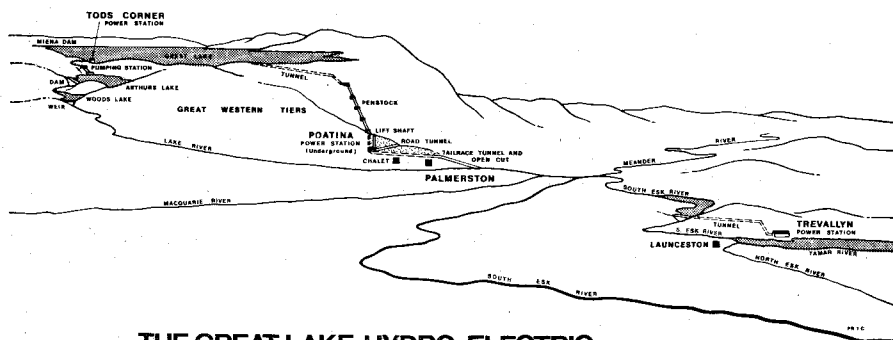
Launceston. This was a purely municipal supply and work on Tasmania's Statewide system did not begin until 1911 with the exploitation of the Great Lake catchment waters and diversion of the Ouse and Shannon Rivers.

By May 1916 *Waddamana 'A'* station (7,000 kW), the first element of the Great Lake scheme, was commissioned. *Shannon* station was opened in 1934 and in 1944 the third element of the scheme, *Waddamana 'B'* station, commenced generation. When *Poatina* station was commissioned in 1964, the *Waddamana 'A'* and *Shannon* stations were closed down, *Waddamana 'B'* (48,000 kW) being retained only for emergency and peak-load generation.

Subsequent Developments

(i) The *Tarraleah* scheme, drawing water from the artificial Lake King William, was commenced in 1934; the early elements of *Tarraleah* station first generating power in 1938. The capacity of *Tarraleah* was progressively expanded to 90,000 kW and the station was completed in 1951 with the installation of a sixth generator. *Butlers Gorge* station (12,200 kW), the second element of this scheme, commenced generation on the completion of the Clark Dam in 1951.

(ii) Built to regulate run-off from the extensive area between Great Lake and Lake St Clair, the 32,400 kW *Lake Echo* and 125,000 kW *Tungatinah* stations were commissioned in 1956.

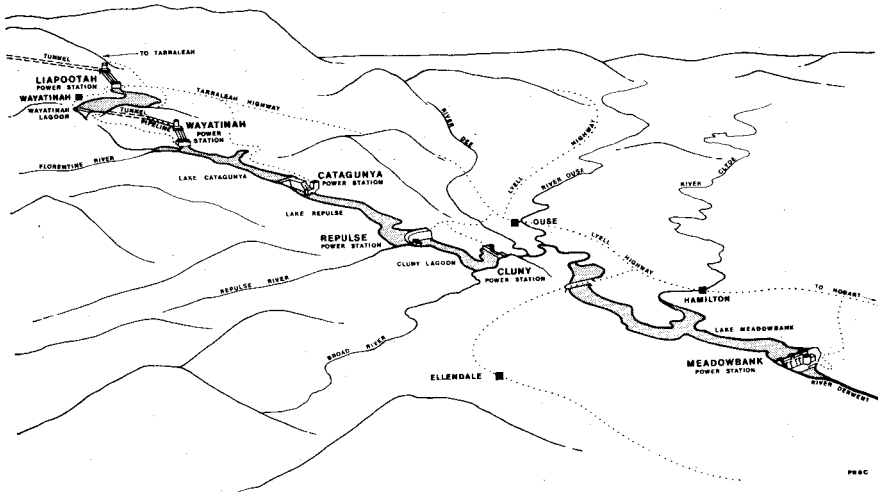


**THE GREAT LAKE HYDRO-ELECTRIC
POWER DEVELOPMENTS**

(iii) The *Poatina* station (250,000 kW), the largest of all the stations in the Tasmanian hydro-electric development, was completed in 1965. The station utilises the waters of Great Lake which have been diverted into the South Esk system. The *Poatina* tailrace discharges into the South Esk River which feeds the 'run of the river' *Trevallyn* station (80,000 kW; located at Launceston). The above diagram shows the Great Lake scheme in detail.

(iv) Two systems—the Upper and Lower Derwent Schemes—utilise the combined waters of the Derwent and its major tributaries, the Nive and Florentine. In the Upper Derwent system the *Wayatinah* station (38,250 kW) was completed in 1957, followed by the 83,700 kW *Liapootah* station (1960) and the 48,000 kW *Catagunya* station (1962). The lower Derwent stations *Meadowbank* (40,000 kW), *Cluny* (17,000 kW) and *Repulse* (28,000 kW) were opened during 1967 and 1968.

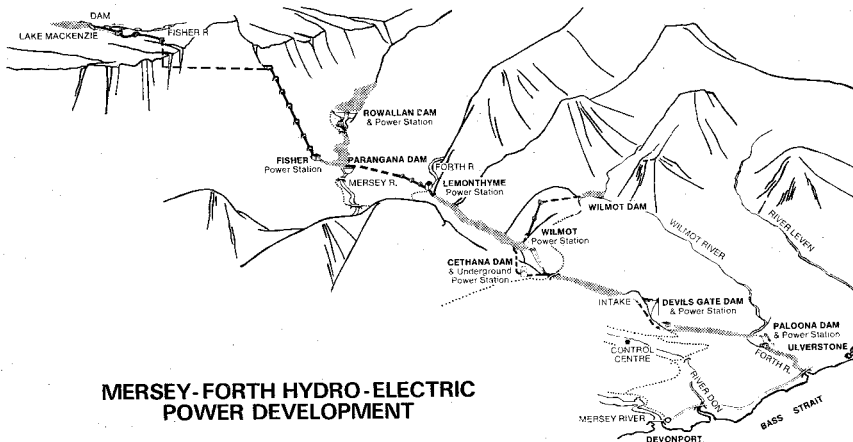
The following diagram shows the development of the power potential of the Derwent River catchment.



Derwent River Power Developments

(v) Construction of the Mersey-Forth power scheme in north-western Tasmania was completed in 1972. As shown in the accompanying diagram the Fisher, Mersey, Wilmot and Forth rivers have been exploited by a combination of seven power stations, seven large dams and three major tunnels together with associated penstocks, canals and flumes.

On the Mersey River, Lake Rowallan is of major importance as it provides the main storage of the development as a whole and regulates the water flow to the down-stream stations. Water flows through the *Rowallan* (10,450 kW) station and downstream to the Parangana Dam.



**MERSEY-FORTH HYDRO-ELECTRIC
POWER DEVELOPMENT**

The second high-level storage in the scheme is derived from the development of Lake Mackenzie on the Fisher River. Water is taken by flume, canal, tunnel and pipeline to the *Fisher* (43,200 kW) station. Tailrace waters discharge into the Fisher River which joins the Mersey River just above the Parangana Dam. The Parangana Dam diverts waters of the Mersey and Fisher Rivers westwards by a three-mile tunnel and a penstock to the *Lemonthyme* (51,000 kW) station on the Forth River.

Downstream, the waters of the Wilmot River are diverted to the east by tunnel to the *Wilmot* station (30,600 kW) located on the Forth River above the Cethana Dam.

The combined flows of all four rivers (Fisher, Mersey, Wilmot and Forth) are then used for power generation at three more power stations, all situated in the Forth Valley at the foot of dams at *Cethana* (85,000 kW), *Devils Gate* (60,000 kW) and *Paloona* (28,000 kW).

All seven power stations are designed for fully automatic operation and are remotely controlled from a centre near Sheffield.

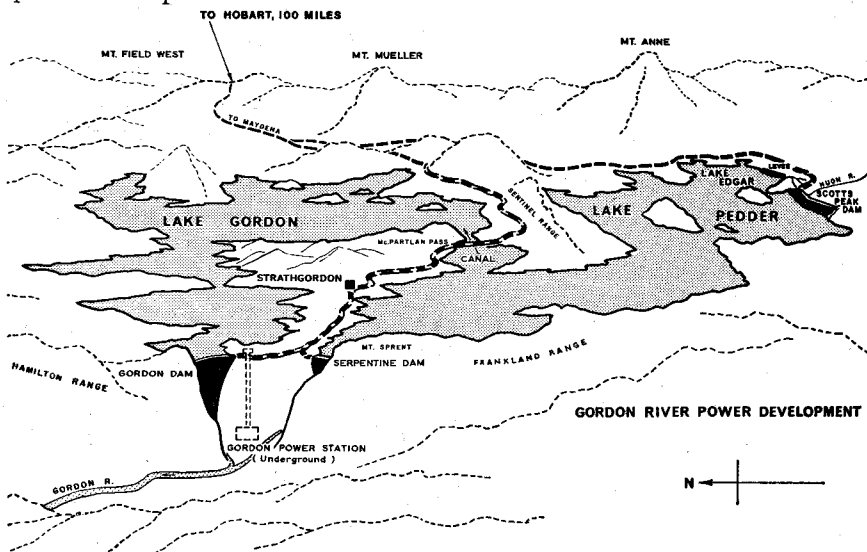
Future Development

Gordon River Road: In the earlier stages of investigation of schemes in Tasmania's south-west, light aircraft and helicopters were used for transport but weather conditions frequently made flying impossible. Vehicle access was a necessity, especially for the transport of heavy equipment and stores. In 1963 the Federal Government granted \$5m to build the 53-mile Gordon River Road to open up the area.

The road, largely unsealed, starts west of Maydena, passes through Strathgordon (construction headquarters), and ends at the *Gordon* power station site.

Gordon River Power Development—Stage 1: This development, to be completed by 1976, will create the largest water storage in Australia, having a total useful capacity of 11.8m acre-feet, seven to eight times the size of the Great Lake, and three times the size of Lake Eucumbene, the largest lake in the Snowy Mountains Scheme.

The following diagram shows the essential features of the Gordon River power development:



The Lake Gordon storage will be created by a combination of three dams and a levee located on the Gordon and Serpentine Rivers and at Scotts Peak (to prevent over-spill into the Huon River).

Water from the Huon and Serpentine catchments together will flow through a canal at McPartlan Pass into Lake Gordon; it will then be carried from the Gordon storage by a near vertical shaft to a power station, 610 feet underground. The station will be reached from the top by lift and from the Gordon River Road by tunnel. It is designed to be operated by remote control from Hobart, 100 miles away.

Bell Bay Thermal Station: Installation of the second stage of the Bell Bay oil-fired thermal station is scheduled for completion in 1974. Power generation from the first stage commenced in February 1971.

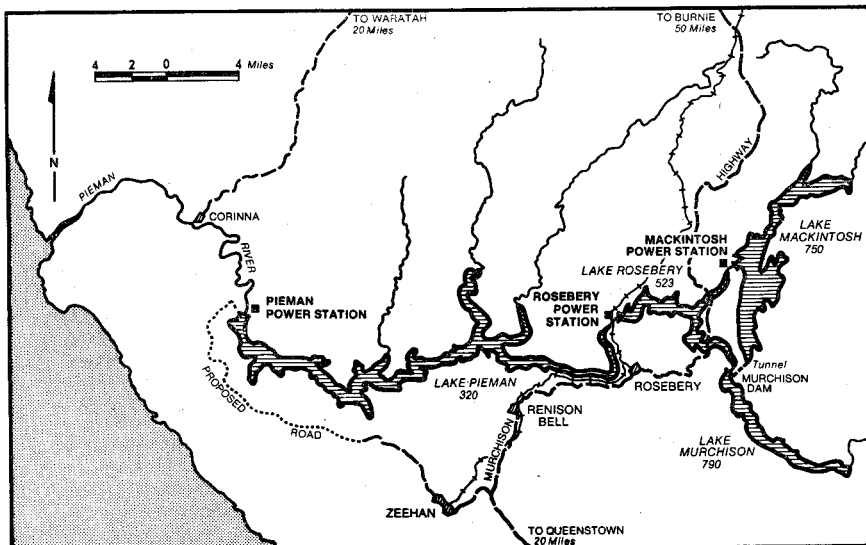
The station was originally designed to accommodate two steam driven 120,000 kW generators and many of the facilities installed as part of the first stage have sufficient capacity to satisfy the demands of the additional generator. The capital cost of installing the second generating set should be therefore, substantially less than that of the first stage of construction.

Proposed Scheme

Pieman River

In a Report presented to Parliament on 21 October 1970, the Hydro-Electric Commission announced a power development in the Pieman River catchment of the West Coast. The total capital cost is estimated at \$114m; the total installed capacity at 420,000 kW; and the eventual average output at 1,770 kW hours per annum.

Location: The Pieman River flows from the confluence of the Murchison and Mackintosh Rivers, entering the sea below Corinna (see diagram below). The catchment area of 1,034 square miles is mostly rugged, mountainous Crown Land, experiencing annual rainfall between 90 inches and 140 inches. Only two per cent (24 square miles) of the catchment area will be inundated. No developed farmland, no known mineral deposits of commercial value and only very limited quantities of exploitable timber occur in the area.



An administrative base will be constructed near Zeehan, with additional accommodation centres near the main construction sites (Rosebery, Tullah and the Pieman dam). The peak work force will be 900 workers.

Power Stations: (i) *Mackintosh.* The scheme includes: a dam over 300 feet high on the Murchison River; a 6,800 feet long tunnel from Lake Murchison to Lake Mackintosh; a dam 250 feet high on the Mackintosh River about two miles downstream from the Sophia River junction and the subsidiary Tullibardine dam (80 feet high) together creating the main storage of the entire development; and a 72,000 kW power station below the Mackintosh dam through which the combined flows of the Mackintosh and Murchison Rivers will pass.

(ii) *Rosebery.* Includes: a dam about 240 feet high, located on the Pieman River upstream from the Rosebery township, creating a lake extending up the Mackintosh River to the Mackintosh Power Station and up the Murchison River to just downstream of the Murchison dam; a power station immediately below the Rosebery dam, installed capacity, 76,500 kW; the relocation of one and a half miles of the Murchison Highway including new bridges over the Murchison and Mackintosh Rivers; and the relocation of about two miles of the Emu Bay railway, including a new bridge over the Pieman River.

(iii) *Pieman.* Comprises: a dam about 390 feet high located on the Pieman River immediately upstream from its junction with Stringer Creek; a subsidiary dam 50 feet high; a 270,000 kW power station, located at the junction with Stringer Creek; and a main access road, 22.5 miles long, from Zeehan to the dam site, about six miles upstream from Corinna.

Growth of Hydro-Electric System

The following table shows the growth of the system in recent years:

Hydro-Electric Commission: Operating Statistics

Year	Total Rating of Alternators	Peak Loading	Average Loading	Annual (a) Load Factor
	kW	kW	kW	per cent
1959	485,350	403,600	274,150	67.9
1960	569,050	415,400	285,250	68.7
1961	569,050	438,400	297,080	67.8
1962	617,050	461,600	323,790	70.1
1963	617,050	550,300	378,000	68.7
1964	806,550	582,000	405,620	69.7
1965	807,550	593,700	427,580	72.0
1966	r 809,150	624,100	451,047	72.3
1967	866,150	636,900	445,490	69.9
1968	r 904,600	628,000	r 449,028	71.5
1969	r 1,015,600	735,500	r 556,249	r 75.6
1970	1,166,200	778,700	589,718	75.7

(a) Average loading as a percentage of peak loading.

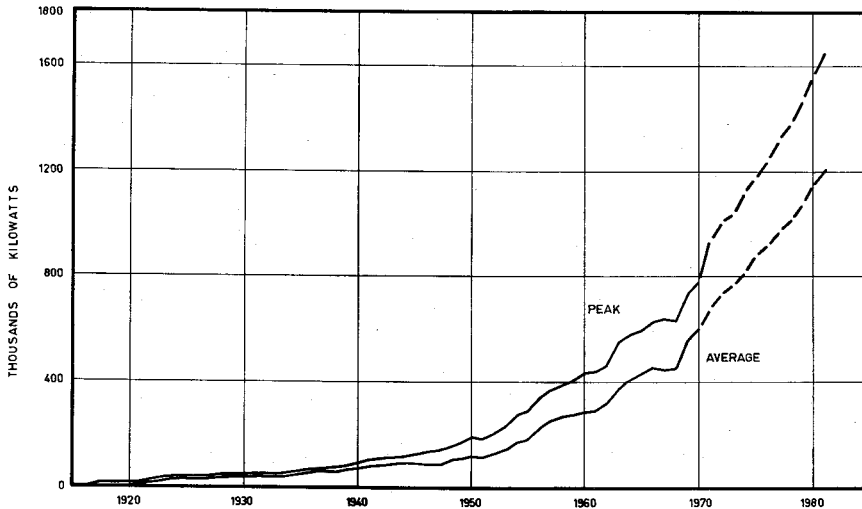
Average Load Factor

The alternator rating (i.e. generator capacity) is necessarily much higher than the peak loading since some generating plant must be held in reserve against the possibility of break-down.

A power system must be designed to meet both the peak loading (the demand component) and the average loading (the energy component). Peak loading tends to represent high demand for relatively short periods, i.e. it has

relatively little energy associated with it. The obvious design and operational problem is to create sufficient capacity to meet peak loading and, at the same time, to encourage the use of power so that the highest possible average loading is obtained.

Growth of Tasmanian Electrical Energy Demand
('000 kW)



The Hydro-Electric Commission

The Hydro-Electric Commission is an autonomous statutory authority, responsible almost entirely for the conduct of its own affairs. The 'Minister Administering the Hydro-Electric Commission Act' is answerable to Parliament for the activities of the Commission, but the Commission is not directed by or responsible to the Minister as is a government department. In other words, the Commission is envisaged as a trading or business organisation, and the purpose of the legislation that created it was to remove it from day-to-day political control. The power exerted by Parliament is mainly financial, not over the ordinary revenue and expenditure of the authority, but over the supply of loan moneys for new capital works.

Two other restrictions on the Commission can be listed: (i) it cannot change its tariff charges for the supply of electricity to consumers except with the approval of the Governor-in-Council; and (ii) in certain of its dealings, such as in real estate, the Commission must obtain the approval of the Minister.

The status of the Commission was described thus by the High Court of Australia in a judgment delivered in 1950: 'In the eye of the law the corporation is its own master and is answerable as fully as any other person or corporation. It is not the Crown and has none of the immunities or privileges of the Crown. Its servants are not civil servants and its property is not Crown property.'

Organisation

Under the Commission, with its full-time Commissioner and three part-time Commissioners, there are five branches:

(i) *Civil Engineering Branch*. Responsible for: survey of water resources; design and construction of all civil works involved in power development and allied projects.

(ii) *Electrical Engineering Branch*. Responsible for: studies of load growth and system development; design and construction of all electrical engineering works in conjunction with the Civil Engineering Branch.

(iii) *Power Branch*. Responsible for: operation and maintenance of completed power developments; generation and transmission of power in bulk.

(iv) *Retail Supply Branch*. Responsible for: distribution of electricity to consumers; operation and maintenance of the distribution system; inspection of installations and equipment.

(v) *Secretarial*. Responsible for: general administrative business of Commission with sub-sections dealing with accounts, law, personnel, transport, stores and purchasing, medical services, central records and other services.

Technical Details

Generation

The total installed generator capacity of the Commission's 21 power stations is 1,251,200 kW. All stations generate alternating current at a frequency of 50 cycles per second. The power is stepped up at each station, to the voltage required for transmission.

Transmission

Power is conveyed from the power stations by 220,000, 110,000 or 88,000 volts transmission lines to major sub-stations at various load centres. All power stations and major sub-stations are linked into a grid system thereby ensuring a reliable supply to all parts of the State.

Distribution

Power is distributed from the major sub-stations by a network of 22,000 and 11,000 volt feeder lines from which power is stepped down, at distribution sub-stations, to 415/240 volts for supply to individual consumers.

Bruny Island is connected to the main power supply by an undersea cable; King Island is supplied by an internal combustion plant operated by the Commission; Flinders Island is supplied from a generator operated at the district hospital at Whitemark.

Retail Distribution

In the early days of the Commission's operation, consumers of electrical power received it from three sources: from municipalities with their own generating capacity; from municipalities retailing power bought from the Commission; and from the Commission direct. Gradually uniformity was achieved, municipalities stopped generating and retailing and the one authority became the sole supplier, both of bulk power to industry and retail power to homes, shops, businesses, etc. One effect has been uniformity in tariff charges for retail power so that the farmer on the most remote holding is charged no more than dwellers in the principal cities. Tasmania has achieved an Australian record figure for distribution of electrical power—it is estimated that over 98 per cent of homes and farms are now connected. Tariff charges are also the lowest in Australia.

The following table shows comparative average prices for power in the Commonwealth:

Price of Electric Power: Tasmania and Other States, 1969-70 (a)
(Cents per Kilowatt Hour)

State or Territory	Residential Sales	Commercial Sales	Industrial Sales	Average All Sales (b)
New South Wales	1.98	(c)	(c)	1.91
Victoria	2.08	3.23	1.75	2.13
Queensland	2.18	3.41	1.72	2.24
South Australia	1.66	2.74	1.46	1.80
Western Australia	2.33	(c)	(c)	2.24
Tasmania	1.52	1.92	0.59	0.81
Commonwealth Territories ..	2.07	(c)	(c)	2.39
Commonwealth (Average) ..	1.99	n.a.	n.a.	1.90

(a) Source: 'Statistics of the Electricity Supply Industry in Australia' (published by Electricity Supply Association of Australia).

(b) Includes power for traction, public lighting, etc. not specified in first three columns.

(c) Not recorded separately.

It will be observed that the Tasmanian average is the *lowest* and the householder pays less per unit on the average than his counterpart on the Australian mainland. The economy of hydro-electric generation can be best obtained by comparing the prices charged industrial users. In 1971, Tasmanian power charges were increased by seventeen per cent comprising a twelve per cent lift in retail tariffs plus a government tax of five per cent. The government tax was levied on H.E.C. revenue but was passed on by the Commission to consumers.

The following table shows the amount of power sold in the Commonwealth:

Sales of Electric Power: Tasmania and Other States, 1969-70 (a)
(Million Kilowatt Hours)

State or Territory	Residential Sales	Commercial Sales	Industrial Sales	Total Sales (b)
New South Wales	6,170	(c) 9,537		16,241
Victoria	3,994	1,694	4,387	10,407
Queensland	1,859	776	1,758	4,427
South Australia	1,422	500	1,558	3,505
Western Australia	792	(c) 1,097		1,916
Tasmania	785	156	3,597	4,551
Commonwealth Territories ..	308	(c) 433		760
Commonwealth Total	15,330	(c) 25,493		41,807

(a) Source: 'Statistics of the Electricity Supply Industry in Australia' (published by the Electricity Supply Association of Australia).

(b) Includes power for traction, public lighting, etc. not specified in first three columns.

(c) Not recorded separately.

Finances of Hydro-Electric Commission

The table that follows shows the Commission's income and expenditure, and also its total loan debt for the last three years:

Hydro-Electric Commission
Income, Expenditure and Net Loan Debt
(\$'000)

Particulars	1967-68	1968-69	1969-70	1970-71
INCOME				
Sales—Bulk Power	8,676	12,986	15,233	17,168
Retail Current	18,707	20,221	21,472	22,540
Other Income	243	431	591	443
Total	27,626	33,638	37,296	40,151
EXPENDITURE				
Operation, Distribution, Administration ..	10,344	11,302	12,736	15,236
Interest on Loans and Reserves	15,785	17,679	19,736	22,350
Less Interest Capitalised	—2,508	—2,983	—3,617	—4,044
Depreciation Provision	3,578	4,025	4,285	4,544
Superannuation Contribution	912	999	1,091	1,398
Other Expenditure	495	803	864	586
Net Profit	—980	1,814	2,201	81
Total	27,626	33,638	37,296	40,151
NET LOAN DEBT AT 30 JUNE				
Net Loan Indebtedness to State Treasury ..	272,856	291,029	311,384	332,909
Other Loans	36,107	44,956	58,892	66,032
Total	308,963	335,985	370,275	398,940

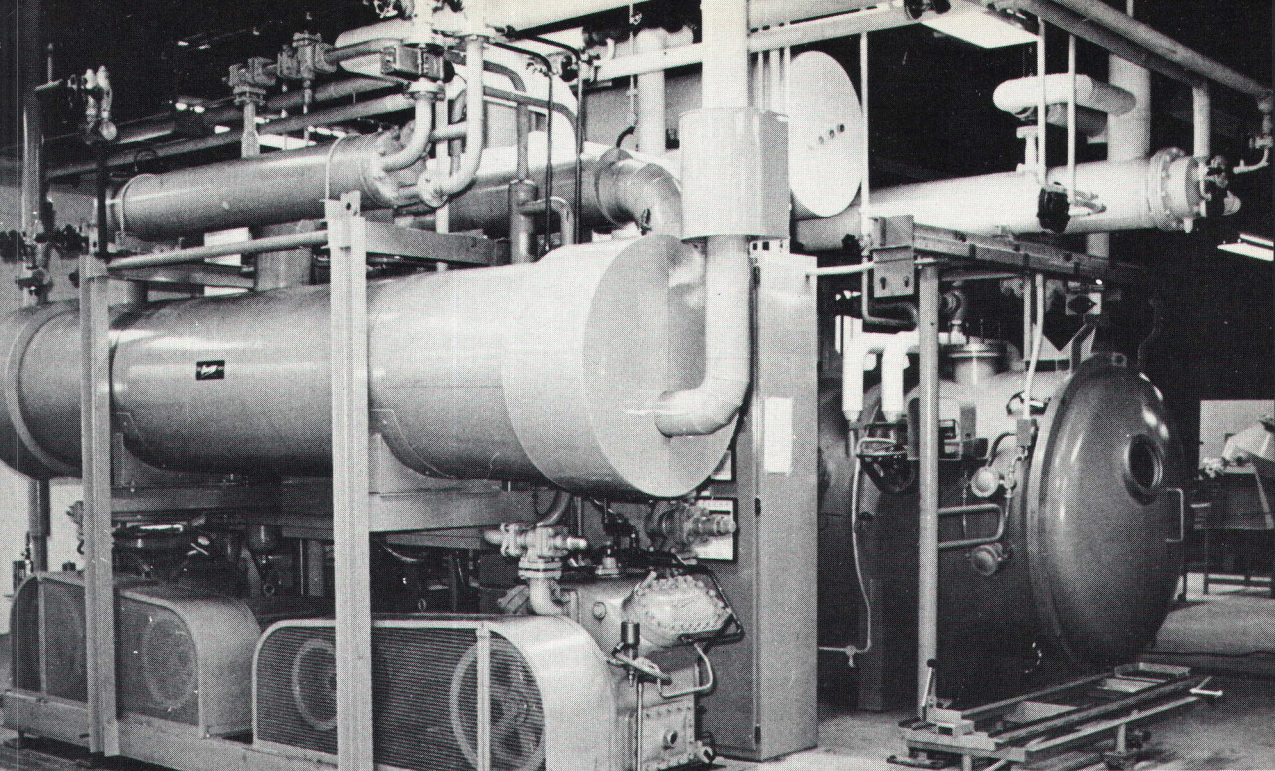
At 30 June 1971, net loan debt was \$398.9m, the liability to the State Treasury standing at \$332.9m.

Electricity and the Tasmanian Economy

Although Tasmania has only three per cent of the Commonwealth's population, it produces more than ten per cent of Australia's electricity. In 1969-70 the State's consumption (including both retail and industrial) was nearly 12,000 units per head (ranking second only to Norway).

To 30 June 1970, capital expenditure on the developments and associated works totalled nearly \$461m. Approximately \$45m is being spent each year on expansion of the system. All annual charges (interest, depreciation, operation, etc.) are borne by the Commission out of its revenues from the sale of electricity. There are no subsidies or other contributions from general State revenues.

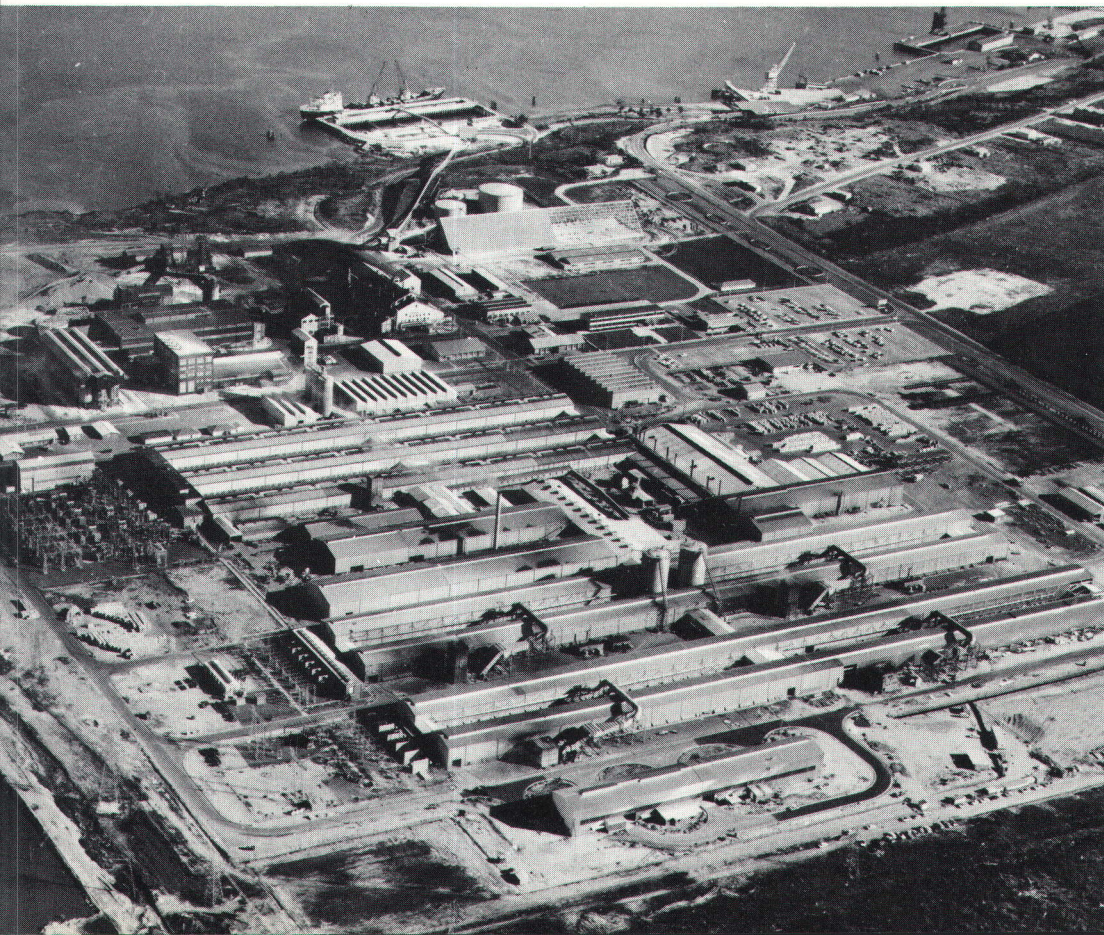
Tasmania's prosperity owes a great deal to the development of hydro-electric power. Low-cost electricity has attracted several major industries to the State. Australia's largest producers of zinc and aluminium and the only producers of newsprint, calcium carbide and ferro-manganese, were influenced largely by the existence of plentiful power supplies. In addition, the State is a major producer of tin, pelletised iron ore, fine paper, woollens and textiles, processed foods, cement, titanium oxide, etc. all of which depend on the availability of cheap electric power.

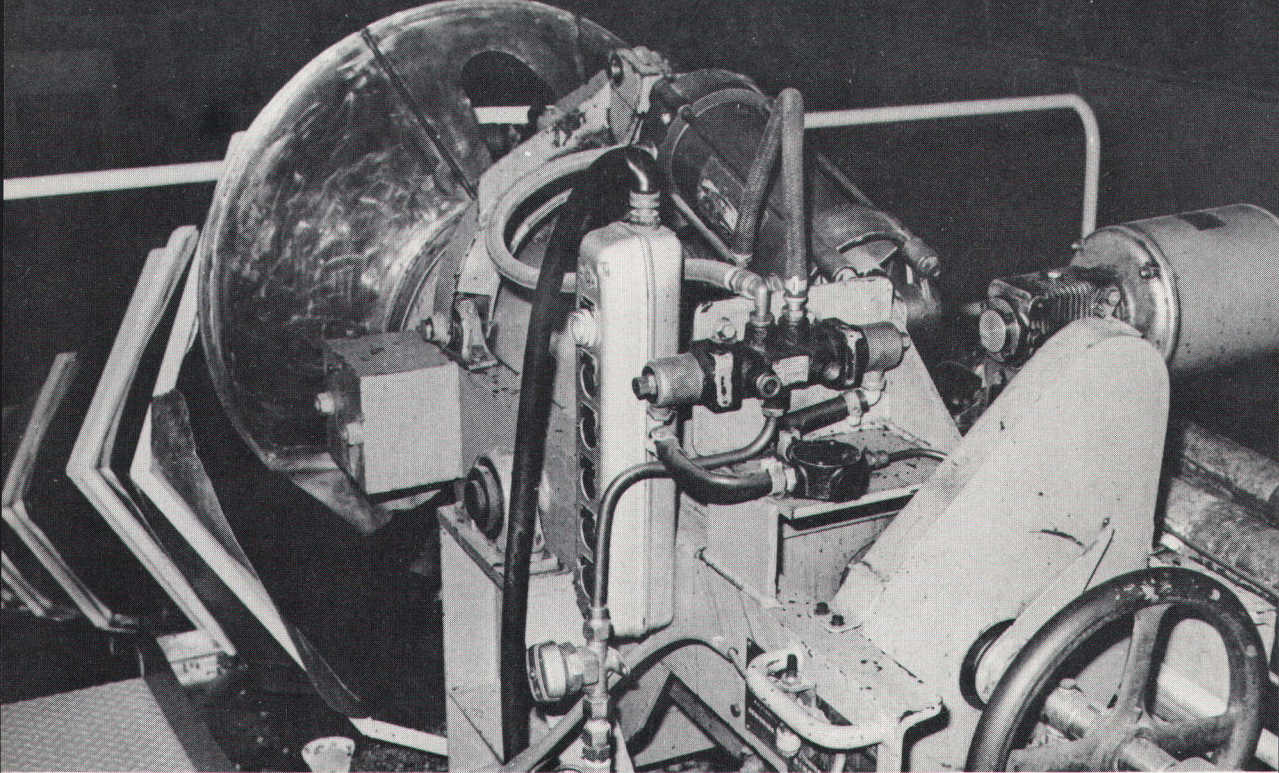


Freezer dryer and ancillary equipment, Armed Forces Food Science Establishment, Scottsdale

(Dept of Supply)

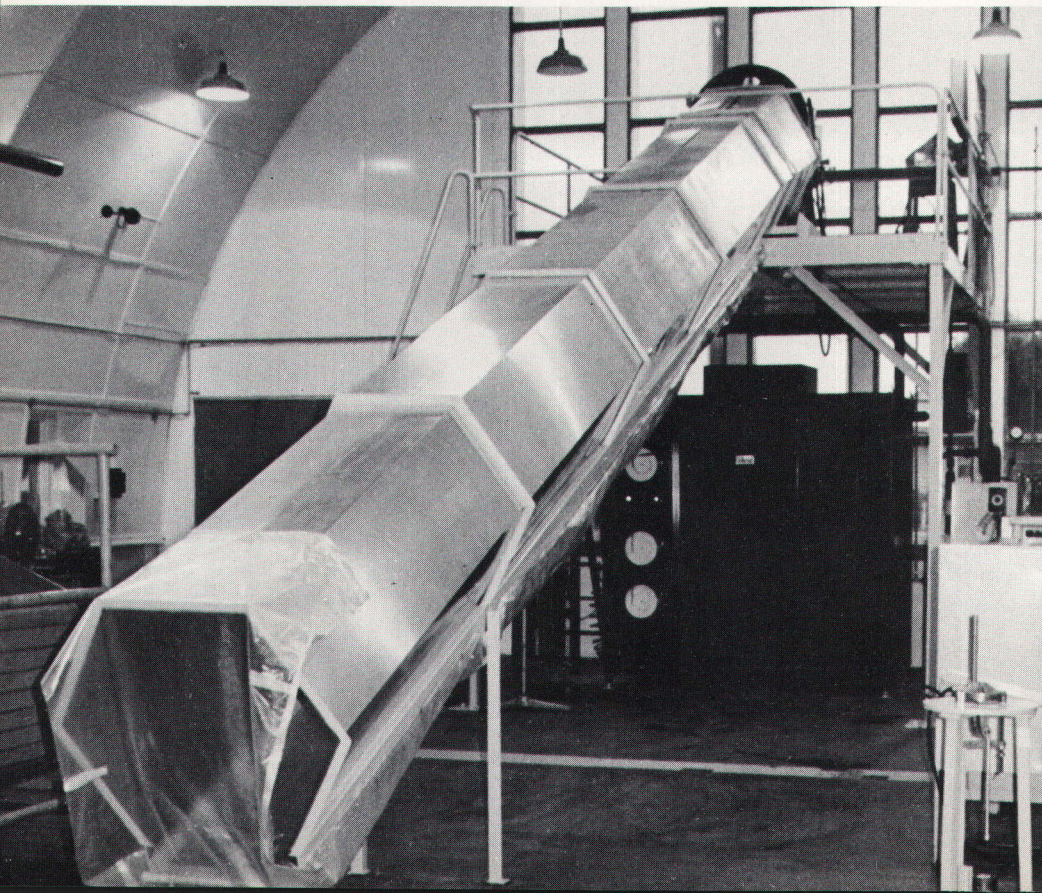
Comalco (Aust.) Pty Ltd aluminium refinery at Bell Bay on the River Tamar, September 1970 (Vern Reid)





Dehydration 'puffing gun' (top) and barrel (bottom), Scottsdale

(Dept of Supply)



Chapter 9

HOUSING AND BUILDING

DWELLING STATISTICS

Introduction

Information concerning the housing of the State's population is obtained from householders' schedules collected during the population censuses. For the purposes of the 1966 Census an 'occupied dwelling' was defined as 'any habitation occupied by a household group living together as a domestic unit, whether comprising the whole or only part of a building'. The term, therefore, has a very wide reference.

Private Dwellings

Private dwellings are further classified into the following five categories:

Private House: These include houses used for dwelling purposes and shared private houses for which only one Householder's Schedule was received.

Share of Private House: This is a portion of a shared private house occupied separately and for which a separate Householder's Schedule was furnished.

Flat: This is a part of a house or other building which can be completely closed off and which has its own cooking and bathing facilities.

Sheds, Huts, Garages, etc.: Those used for dwelling purposes.

Other Private Dwellings: These include private dwellings such as rooms, apartments, etc. which are parts of buildings but are not self-contained units.

Other Than Private Dwellings

These include hotels; motels; boarding houses; hostels; educational, religious and charitable institutions; hospitals; defence and penal establishments; police and fire stations; residential clubs; staff barracks and quarters, etc.

Unoccupied Dwellings

These include vacant dwellings available for sale or renting; dwellings such as 'week-ender', 'holiday-home', 'second home', 'seasonal workers' quarters', which were not occupied on the night of the census; dwellings normally occupied but whose usual occupants were temporarily absent on the night of the census; newly completed dwellings whose owners or tenants had not entered into occupation on the night of the census; dwellings described as 'to be demolished', 'condemned', 'deceased estate' and buildings constructed as dwellings but used for non-dwelling purposes on the night of the census. The total of unoccupied dwellings must not be read as the number of vacant houses and flats available for sale or renting.

Definitions of Statistical Areas

In the tables that follow, the terms Hobart Statistical Division, Urban Hobart and Urban Launceston are used. For a definition of these terms see Chapter 5, 'Demography'.

1966 Census Statistics

Dwellings at 1966 Census

The following table shows the classification of occupied dwellings and the number of unoccupied dwellings at the 1966 Census:

Dwellings at Census 30 June 1966

Description	Urban Hobart	Urban Launceston	Rest of State	Total
Occupied Private Dwellings—				
House	27,279	14,692	46,809	88,780
Flat	3,838	1,737	1,461	7,036
Share of House or Flat	241	87	163	491
Shed, Hut, etc.	70	36	776	882
Other	603	197	293	1,093
Total	32,031	16,749	49,502	98,282
Unoccupied Private Dwellings (a)	1,307	808	8,418	10,533
Occupied Non-Private Dwellings—				
Hotels and Motels	80	45	171	296
Boarding House, Guest House, etc. ..	166	71	109	346
Educational, Religious and Charitable Institutions	34	20	34	88
Hospitals	12	4	32	48
Other (b)	48	29	229	306
Total	340	169	575	1,084

(a) Comprises unoccupied private dwellings classified as houses, flats, sheds, huts, etc.

(b) Includes dwellings described as staff barracks, etc.

Nature of Occupancy

The details contained in the next table relate only to occupied private dwellings classified as houses or flats.

Occupied Private Houses and Flats by Nature of Occupancy
at Census 30 June 1966

Nature of Occupancy	Urban Hobart	Urban Launceston	Rest of State	Total
Houses—				
Owner (a)	21,589	11,739	33,086	66,414
Tenant—				
Housing Department	2,287	696	1,701	4,684
Other	3,018	2,083	10,252	15,353
Caretaker	139	94	950	1,183
Other (b)	246	80	820	1,146
Total Houses	27,279	14,692	46,809	88,780
Flats—				
Owner (a)	701	304	266	1,271
Tenant—				
Housing Department	372	30	57	459
Other	2,671	1,361	1,069	5,101
Caretaker	52	24	39	115
Other (b)	42	18	30	90
Total Flats	3,838	1,737	1,461	7,036

(a) Owned freehold, on mortgage or under purchase instalment.

(b) Includes those for which nature of occupancy was not stated.

Facilities

At 30 June 1966, 79.2 per cent of occupied private houses had television. The corresponding percentage for occupied private flats was 60.3. In the next table, details of the number of occupied private houses and flats served by electricity and gas are given:

**Occupied Private Houses and Flats by Facilities
at Census 30 June 1966**

Facilities	Urban Hobart	Urban Launceston	Rest of State	Total
HOUSES				
Electricity Only	24,573	10,553	45,279	80,405
Gas Only	9	10	75	94
Electricity and Gas	2,576	4,108	698	7,382
Not Stated Electricity and/or Gas	91	9	187	287
Neither Electricity nor Gas	30	12	570	612
Total	27,279	14,692	46,809	88,780
FLATS				
Electricity Only	3,140	959	1,421	5,520
Gas Only .. .. .	..	5	..	5
Electricity and Gas	662	768	31	1,461
Not Stated Electricity and/or Gas	36	4	7	47
Neither Electricity nor Gas .. .. .	..	1	2	3
Total	3,838	1,737	1,461	7,036

Material of Outer Walls

The next table classifies private houses and flats (occupied and unoccupied) by material of their outer walls:

**Material of Outer Walls of Occupied and Unoccupied Private Houses and Flats
at Census 30 June 1966 (a)**

Material of Outer Wall	Urban Hobart	Urban Launceston	Rest of State	Total
PRIVATE HOUSES				
Brick	9,744	5,846	5,455	21,045
Stone or Concrete	1,246	530	2,264	4,040
Wood	16,992	8,635	41,313	66,940
Fibro-Cement	226	213	3,481	3,920
Other	33	42	741	816
Total	28,241	15,266	53,254	96,761
PRIVATE FLATS				
Brick	2,556	814	497	3,867
Stone or Concrete	755	186	160	1,101
Wood	791	857	852	2,500
Fibro-Cement	47	34	86	167
Other	6	2	15	23
Total	4,155	1,893	1,610	7,658

(a) Excludes: (i) share of private house or flat; (ii) private dwellings classified as sheds, huts, etc.

Intercensal Estimates of Houses and Flats

It is not possible to prepare a detailed analysis of dwellings between censuses but intercensal estimates of the number of houses and flats by local government areas are prepared. The base for the estimates is the total number of occupied and unoccupied private houses and flats as recorded at the preceding Census. The Census figures are then adjusted for: (i) demolitions, destructions by fire, conversions and transfers of houses and flats; and (ii) completions of new houses and flats. Transfer of houses between local government areas is merely a redistribution and does not affect total number of houses for the State. Information about demolitions, conversions and transfers is obtained from local government authorities and the Hydro-Electric Commission. The number of new houses and flats completed is available from the quarterly Building Construction collection conducted by this Bureau.

Details of the number of houses and flats by local government areas recorded at the 1966 Census and as estimated for later years are contained in the following table:

Number of Houses and Flats at 30 June

Local Government Area (Statistical Division in Bold Type)				Houses and Flats			
				Census	Estimated (b)		
					1966 (a)	1968	1969	1970
Hobart	(H)	..	..	15,352	15,447	15,700	15,942
Glenorchy	(H)	..	..	10,209	10,931	11,148	11,427
Clarence	(H)	..	..	8,180	8,663	9,251	9,844
Brighton	(SE)	(H)	..	613	616	626	632
Glamorgan	(SE)	..	..	493	543	556	570
Green Ponds	(SE)	..	..	269	275	278	279
Richmond	(SE)	..	..	510	507	516	521
Sorell	(SE)	(H)	..	1,294	1,399	1,457	1,528
Spring Bay	(SE)	..	..	550	575	593	613
Bruny	(S)	..	..	291	290	291	298
Esperance	(S)	..	..	1,075	1,112	1,121	1,139
Huon	(S)	..	..	1,449	1,460	1,482	1,505
Kingborough	(S)	(H)	..	3,048	2,930	3,013	3,102
New Norfolk	(S)	(H)	..	2,371	2,516	2,577	2,634
Port Cygnet	(S)	..	..	756	750	758	765
Tasman	(S)	..	..	499	534	552	577
Hobart (c)	..	..	..	38,918	48,548	49,919	51,376
South Eastern (c)	..	..	..	2,593			
Southern (c)	..	..	..	5,448			
Launceston	..	..	..	11,209	11,328	11,359	11,400
North Central	..	..	..	11,209	11,328	11,359	11,400
Burnie	..	..	..	4,745	5,135	5,341	5,473
Circular Head	..	..	..	1,995	2,138	2,199	2,253
Deloraine	..	..	..	1,482	1,519	1,541	1,558
Devonport	..	..	..	4,650	5,155	5,394	5,641
Kentish	..	..	..	1,424	1,600	1,621	1,657
King Island	..	..	..	721	740	750	756
Latrobe	..	..	..	1,325	1,409	1,436	1,489
Penguin	..	..	..	1,230	1,279	1,306	1,352
Ulverstone	..	..	..	2,881	3,072	3,150	3,217
Wynyard	..	..	..	2,583	2,783	2,889	3,015
North Western	..	..	..	23,036	24,830	25,627	26,411

Number of Houses and Flats at 30 June—*continued*

Local Government Area (Statistical Division in Bold Type)	Houses and Flats			
	Census	Estimated (b)		
	1966 (a)	1968	1969	1970
Beaconsfield	3,284	3,473	r 3,565	3,681
Fingal	1,157	1,179	1,190	1,198
Flinders	345	371	372	375
George Town	1,514	1,624	1,695	1,749
Lilydale	1,961	2,060	2,117	2,169
Portland	558	625	657	693
Ringarooma	880	883	888	889
Scottsdale	1,199	1,269	1,293	1,318
North Eastern	10,898	11,484	11,777	12,072
Evandale	471	473	475	475
Longford	1,625	1,573	1,590	1,607
St Leonards	3,605	4,050	4,218	4,331
Westbury	1,430	1,499	1,523	1,546
North Midland	7,131	7,595	7,806	7,959
Bothwell	349	345	341	343
Campbell Town	545	545	545	549
Hamilton	1,134	1,148	1,142	1,284
Oatlands	775	780	782	787
Ross	182	184	189	189
Midland	2,985	3,002	2,999	3,152
Gormanston	118	119	118	118
Queenstown	1,093	1,121	1,127	1,247
Strahan	165	168	169	172
Waratah	91	392	404	426
Zechan	734	776	800	848
Western	2,201	2,576	2,618	2,811
Tasmania	104,419	109,363	112,105	115,181

(a) Comprises only those dwellings classified as private (occupied or unoccupied) houses and flats.

(b) Census figures adjusted for new houses and flats completed, demolished, destroyed by fire, transferred between local government areas, etc.

(c) Letter(s) following local government area name indicates Division(s) in which each is situated: H=Hobart, SE=South Eastern, S=Southern; some local government areas (e.g. Brighton) form part of two Statistical Divisions.

BUILDING STATISTICS

Scope

In the section that follows building statistics relate exclusively to the erection of new buildings (including major new additions to existing buildings); construction work such as the building of railways, bridges, earthworks, water storages, piers, wharves, etc. is excluded. Minor additions, alterations, renovations and repairs to buildings are also excluded because of the difficulty of obtaining lists of persons who undertake this work.

When a dwelling is attached to a new building, the whole unit, both in regard to number and value, is classified according to the type of new building (e.g. a new shop and dwelling is classified simply as a shop). Figures for flats include 'home units' but not conversions of existing buildings into flats. Number of flats refers to number of new individual dwelling units.

Details obtained from government authorities on their construction programmes and from building contractors refer to all parts of the State. Details for owner-builders cover only those areas subject to building control by local government authorities; thus some farm buildings are excluded but this does not materially affect the figures.

Source of Data

The main statistics relate to building approvals and to building operations (commencements, completions, etc.). The data are derived as follows:

Building Approvals: These comprise: (i) approvals by local government authorities for the construction of private buildings; (ii) contracts let and day labour projects commenced by governmental authorities; and (iii) private buildings reported by contractors to have been commenced in certain areas of the few rural municipalities where building regulations do not apply to the whole municipality. Details are compiled monthly.

Building Operations: Returns are obtained from: (i) building contractors engaged in the erection of new buildings; (ii) owner-builders; and (iii) Commonwealth, State, local and semi-government authorities. Statistics are compiled at quarterly intervals.

Definitions

Contract-built: Includes the operations of all building contractors and government authorities which undertake the erection of new buildings.

Owner-built: An 'owner-built' house is one actually erected or being erected by the owner, or under the owner's direction, without the services of a contractor who is responsible for the whole job.

Commenced: A building is regarded as having been commenced when work on the foundations has begun.

Completed: A building is regarded as having been completed when the contractor has fulfilled the terms of the contract.

With both 'completions' and 'commencements' there is some difficulty in maintaining a uniform classification since the definition of an exact point of time in building operations is involved.

Under Construction: A building is so classified if it is uncompleted at the end of the period, whether or not work on it was actively proceeding at that date.

Values: All values shown exclude the value of land and represent the estimated value of buildings *on completion*. In the case of owner-built dwellings, the owner-builder is required to estimate the value from the cost of the materials and the cost of labour, including his own.

New buildings, including dwellings, with an estimated value on completion of less than \$1,000 are excluded from the tabulations.

Building Approvals

The following table shows details of building approvals; a distinction is made between 'private' and 'government' and the information is dissected to give separate figures for Urban Hobart, Urban Launceston and the remainder of the State. In 1969-70, 45 per cent of the total value of building approvals was attributed to Urban Hobart, 11 per cent to Urban Launceston and 44 per cent to the remainder of the State.

Building Approvals, 1969-70

Particulars	Urban Hobart	Urban Launceston	Remainder of State	Total Tasmania
NUMBER				
New Houses—Private	569	256	1,299	2,124
Government	294	11	227	532
Total	863	267	1,526	2,656
VALUE (\$'000)				
New Houses—Private	7,377	2,856	12,184	22,417
Government	2,273	76	1,864	4,214
Other New Buildings (a)—				
Private	9,731	2,173	9,310	21,214
Government	7,374	1,660	2,655	11,690
Alterations and Additions—				
Private	1,020	402	1,041	2,464
Government	85	38	151	274
All Building—Private	18,128	5,431	22,535	46,095
Government	9,733	1,773	4,671	16,177
Grand Total	27,861	7,204	27,207	62,272

(a) Includes flats.

The next table shows the decline in the number of building approvals for private new houses since 1966-67 and for government houses since 1967-68. Building of houses in these two years was at a higher than normal level due to the urgent need to replace many dwellings destroyed during the severe bushfires in southern Tasmania in February 1967.

Building Approvals, Selected Years

Particulars	1959-60	1965-66	1966-67	1967-68	1968-69	1969-70
NUMBER						
New Houses—Private	2,094	1,837	2,500	2,393	2,206	2,124
Government	452	591	718	916	488	532
Total	2,546	2,428	3,218	3,309	2,694	2,656
VALUE (\$'000)						
New Houses—Private	13,183	15,229	21,057	22,212	22,292	22,417
Government	2,951	3,854	4,720	7,870	3,602	4,214
Other New Buildings (a)—						
Private	12,058	19,843	16,154	16,972	14,543	21,214
Government	9,216	7,976	12,022	24,964	11,855	11,690
Alterations and Additions—						
Private	1,511	1,614	1,880	1,942	2,219	2,464
Government	240	355	179	452	211	274
All Building—						
Private	26,752	36,686	39,091	41,126	39,054	46,095
Government	12,407	12,185	16,921	33,286	15,667	16,177
Grand Total	39,159	48,870	56,012	74,412	54,721	62,272

(a) Includes flats.

Building and Construction Work Force

Statistics of wage and salary earners in civilian employment in main industry groups are shown in Chapter 13. One of the groups, 'Building and Construction', includes details of persons employed in the building industry and the following table shows the number of persons employed on new building work only at 30 June for the last five years, classified according to occupation, occupational status and type of building work on which engaged.

Persons (a) Engaged on Jobs Carried Out by Builders of New Buildings in Tasmania at 30 June

Description	1967	1968	1969	1970	1971
OCCUPATION					
Carpenters	2,685	2,496	2,396	2,172	2,181
Bricklayers	457	505	445	510	481
Painters	485	518	465	427	350
Electricians	331	369	316	295	285
Plumbers	371	391	381	347	359
Builder's Labourers	1,072	998	889	978	1,248
Other	953	852	726	764	830
Total	6,354	6,129	5,618	5,493	5,734
OCCUPATIONAL STATUS					
Contractors	475	457	430	(b) 330	317
Sub-Contractors	886	839	903	763	833
Wage Earners	4,993	4,833	4,285	4,400	4,584
Total	6,354	6,129	5,618	5,493	5,734
TYPE OF BUILDING WORK ON WHICH ENGAGED					
New Houses and Flats ..	2,527	2,498	2,104	2,050	2,061
Other New Buildings (c) ..	3,364	3,200	3,021	3,136	3,559
Repairs and Maintenance ..	463	431	493	307	114
Total	6,354	6,129	5,618	5,493	5,734

(a) Includes Contractors and Sub-Contractors actually working on jobs, but excludes persons working on owner-built houses.

(b) Prior to 1970, figures included some working principals of private companies who are now classified as employees ('wage-earners').

(c) Includes persons working on alterations and additions carried out by builders of new buildings.

Government Construction of Houses: The post-war era was notable for the entry of the State Government into the housing field on a large scale; in November 1945, the Commonwealth Government entered into an agreement with the States whereby it would provide finance for housing projects to be built by the State governments. Under the agreement, Tasmania received \$5,670,000 which it repaid on withdrawing from the scheme in August 1950. The Tasmanian Government nevertheless continued to build houses using the resources available from its own Loan Fund. In 1956, the State Government entered into a new agreement with the Commonwealth, an arrangement renewed with minor modifications in 1961 and 1966. The aggregate advances in Tasmania to 30 June 1970, under the Commonwealth-State Agreements, amounted to \$80,727,000. (Advances under the Commonwealth-State Agreements are additional to State net loan expenditure.)

The following table shows, for Tasmania, the number of new houses completed, and distinguishes between those built for government authorities and those built for private persons:

**Number of New Houses Completed
For Government Authorities and Private Persons**

Year	For Government Authorities	For Private Persons	Total	Year	For Government Authorities	For Private Persons	Total
1954-55	720	1,760	2,480	1962-63	563	1,941	2,504
1955-56	729	1,992	2,721	1963-64	554	1,957	2,511
1956-57	585	2,174	2,759	1964-65	579	2,000	2,579
1957-58	611	1,955	2,566	1965-66	557	1,703	2,260
1958-59	506	2,071	2,577	1966-67	627	2,138	2,765
1959-60	443	2,032	2,475	1967-68	737	2,594	3,331
1960-61	473	2,014	2,487	1968-69	735	1,969	2,704
1961-62	547	1,850	2,397	1969-70	683	2,178	2,861

The proportion of houses built for government authorities has fluctuated between 30 per cent of total houses completed (1950-51) to as low as eighteen per cent (1959-60); in 1969-70, the proportion was 24 per cent. Statistics of houses completed for government authorities do not fully reflect the effect of government policy since the category 'houses built for private persons' includes construction financed, in some cases, by government loans to private persons. Of the \$80,727,000 aggregate advances made in Tasmania to 30 June 1970 under the Commonwealth-State Housing Agreements, 28 per cent represents advances to private persons, either through the mechanism of the Agricultural Bank or the co-operative building societies. Similarly, 'houses built for private persons' includes those built with advances under the Commonwealth's *War Service Homes Act* where the ex-serviceman has obtained the services of a private contractor or operates as an owner-builder.

The principal construction authority in Tasmania is the State Housing Department but 'houses built for government authorities' includes construction by, or for, other State and Commonwealth departments.

New Houses Constructed: The next table shows details of number and value of houses commenced, completed and under construction:

Construction of New Houses

Year	Commenced		Completed		Under Construction (a)	
	Number	Value (b)	Number	Value (b)	Number	Value (b)
		\$m		\$m		\$m
1955-56	2,490	13.6	2,721	14.8	2,305	12.8
1956-57	2,591	14.8	2,759	15.7	2,137	12.2
1957-58	2,378	14.5	2,566	15.6	1,949	11.4
1958-59	2,563	15.5	2,577	15.3	1,935	11.8
1959-60	2,357	14.9	2,475	15.5	1,817	11.3
1960-61	2,248	15.1	2,487	16.3	1,578	10.3
1961-62	2,475	16.3	2,397	15.7	1,656	10.7
1962-63	2,442	16.0	2,504	16.5	1,594	10.3
1963-64	2,550	18.4	2,511	17.3	1,633	11.3
1964-65	2,546	19.5	2,579	19.2	1,600	11.6
1965-66	2,202	17.8	2,260	17.8	1,542	11.6
1966-67	2,952	24.6	2,765	22.1	1,729	14.1
1967-68	3,142	27.5	3,331	28.3	1,538	13.3
1968-69	2,580	25.4	2,704	25.5	1,372	12.9
1969-70	2,682	27.6	2,861	28.3	1,163	11.9

(a) At end of year.

(b) When completed.

In 1966-67 and 1967-68 the increase in commencements and completions was due, in part, to the replacement of many of the 1,200 dwellings destroyed in the bushfires of February 1967.

Material of Outer Walls: The following table shows the number of new houses completed and their classification according to the material used in their outer walls. Until 1963-64, wood was the predominant material used for outer wall construction. In 1964-65, for the first time, new houses completed with brick veneer walls exceeded those completed with wooden walls and this preference for brick veneer has been maintained.

Number of New Houses Completed Classified by Materials of Outer Walls

Materials of Outer Walls	1959-60	1965-66	1966-67	1967-68	1968-69	1969-70
Brick, Concrete, etc.—						
Solid	323	128	167	131	177	173
Veneer	491	1,126	1,159	1,593	1,547	1,719
Wood (Weatherboard, etc.) ..	1,582	932	1,073	1,395	755	577
Asbestos-Cement	79	62	354	207	124	137
Other .. .. .	..	12	12	5	101	255
Total	2,475	2,260	2,765	3,331	2,704	2,861

Construction of New Houses and Flats

In the following table, details are given of completions of new houses and new flats:

New Houses and Flats Completed

Particulars	1959-60	1965-66	1966-67	1967-68	1968-69	1969-70
NUMBER						
New Houses—						
Government Ownership—						
Contract Built	209	309	360	474	447	370
Day Labour	234	248	267	263	288	313
Private Ownership—						
Contract Built	1,030	1,015	1,223	1,705	1,170	1,279
Owner Built	1,002	688	915	889	799	899
Total New Houses	2,475	2,260	2,765	3,331	2,704	2,861
New Flats (Individual Units) (a)	197	221	185	292	366	502
Total New Houses and Flats	2,672	2,481	2,950	3,623	3,070	3,363
VALUE (\$'000)						
New Houses	15,460	17,806	22,063	28,305	25,523	28,283
New Flats (Individual Units) (a)	1,110	1,204	1,167	1,773	2,619	3,887

(a) Individual dwelling units; conversions of existing dwellings to flats are excluded.

Approximately one-third of all new dwellings built in Tasmania in recent years has been located in Urban Hobart. The State Housing Department's activities in Southern Tasmania since 1968 have been concentrated in the Clarence municipality, with the result that more houses have been built during the last three years in that municipality than in any other.

The number of houses and flats completed in each local government area during 1969-70 and 1970-71 are shown in the following table:

Number of New Houses and Flats Completed

Local Government Area (Statistical Division in Bold Type)	1969-70			1970-71		
	Houses	Flats	Total	Houses	Flats	Total
Hobart (H)	137	183	320	103	353	456
Glenorchy (H)	234	51	285	287	95	382
Clarence (H)	547	48	595	416	53	469
Brighton (SE) (H)	7	..	7	10	..	10
Glamorgan (SE)	14	..	14	14	..	14
Green Ponds (SE)	1	..	1	1	..	1
Richmond (SE)	7	..	7	3	..	3
Sorell (SE) (H)	72	..	72	30	..	30
Spring Bay (SE)	20	..	20	12	..	12
Bruny (S)	4	4	8	2	..	2
Esperance (S)	19	..	19	11	..	11
Huon (S)	24	..	24	9	..	9
Kingborough (S) (H)	100	..	100	92	4	96
New Norfolk (S) (H)	51	8	59	36	4	40
Port Cygnet (S)	7	..	7	4	..	4
Tasman (S)	26	..	26	6	1	7
Hobart	1,120	290	1,410	935	509	1,444
South Eastern	58	..	58	39	..	39
Southern	92	4	96	62	1	63
Launceston	77	17	94	69	53	122
North Central	77	17	94	69	53	122
Burnie	137	11	148	133	33	166
Circular Head	52	6	58	37	..	37
Deloraine	19	..	19	17	2	19
Devonport	230	42	272	174	4	178
Kentish	43	..	43	8	..	8
King Island	7	..	7	24	..	24
Latrobe	53	2	55	37	2	39
Penguin	44	2	46	28	..	28
Ulverstone	68	5	73	83	10	93
Wynyard	113	23	136	69	4	73
North Western	766	91	857	610	55	665
Beaconsfield	100	20	120	72	2	74
Fingal	8	..	8	4	..	4
Flinders	3	..	3	4	..	4
George Town	52	3	55	69	4	73
Lilydale	48	5	53	46	..	46
Portland	32	6	38	19	2	21
Ringarooma	8	..	8	5	..	5
Scottsdale	29	..	29	28	7	35
North Eastern	280	34	314	247	15	262
Evandale .. ..	..	..	..	4	..	4
Longford	20	..	20	9	..	9
St Leonards	104	11	115	145	25	170
Westbury	27	..	27	21	2	23
North Midland	151	11	162	179	27	206

Number of New Houses and Flats Completed—continued

Local Government Area (Statistical Division in Bold Type)	1969-70			1970-71		
	Houses	Flats	Total	Houses	Flats	Total
Bothwell	3	..	3	2	..	2
Campbell Town	5	..	5	1	..	1
Hamilton	145	..	145	4	..	4
Oatlands	5	..	5	2	..	2
Ross .. .. .	..	..	..	..	..	..
Midland	158	..	158	9	..	9
Gormanston .. .. .	..	..	..	..	..	..
Queenstown	89	48	137	16	..	16
Strahan	2	2	4	1	6	7
Waratah	21	3	24	26	..	26
Zeehan	47	2	49	70	1	71
Western	159	55	214	113	7	120
Total Tasmania	2,861	502	3,363	2,263	667	2,930
Urban Hobart	856	282	1,138	686	503	1,189
Urban Launceston	281	53	334	301	82	383
Remainder of State	1,724	167	1,891	1,276	82	1,358

Construction of All New Buildings

The previous tables in this section have been concerned with the construction of new houses or of new houses and flats. In the five years ended 30 June 1970, the value of houses and flats completed has approximated half of the total value of all new buildings completed in each year. The next table shows the value of all new buildings according to type completed; houses and flats are included to allow comparison.

Value of All New Buildings Completed: Classified According to Type
(\$'000)

Type of Building	1959-60	1965-66	1966-67	1967-68	1968-69	1969-70
Houses (a)	15,460	17,806	22,063	28,305	25,523	28,283
Flats	1,110	1,204	1,167	1,773	2,619	3,887
Hotels, Guest Houses, etc.	782	264	1,301	934	1,513	2,107
Shops	992	1,529	835	1,903	1,103	2,348
Factories	1,722	2,218	5,891	9,686	8,722	6,322
Offices	1,562	1,454	2,711	1,409	4,539	5,291
Other Business Premises	2,822	2,731	4,338	2,339	3,019	1,753
Educational	2,716	5,113	2,616	4,572	3,853	6,469
Religious	110	254	321	178	316	576
Health	2,210	4,086	4,103	3,836	2,251	4,965
Entertainment and Recreation	152	666	577	616	507	925
Miscellaneous	1,968	2,355	2,293	6,332	2,984	3,527
Total All Buildings	31,606	39,680	48,218	61,881	56,947	66,452

(a) Includes estimated value of owner-built houses.

The following table gives details of the total value of all new buildings commenced, completed and under construction. A specification of the items included under 'all new buildings' appears in the previous table.

Value (When Completed) of All New Buildings (a)
(\$m)

Year	Com- menced	Com- pleted	Under Construc- tion (b)	Year	Com- menced	Com- pleted	Under Construc- tion (b)
1960-61	28.3	34.0	25.9	1965-66	43.8	39.7	37.4
1961-62	35.4	33.5	27.8	1966-67	62.1	48.2	51.3
1962-63	34.6	34.1	28.4	1967-68	63.2	61.9	52.5
1963-64	34.7	34.0	29.1	1968-69	56.2	56.9	51.9
1964-65	42.0	37.7	33.5	1969-70	62.1	66.5	51.0

(a) Includes estimated value of owner-built houses.

(b) At end of period.

The following table shows the value of new buildings in local government areas:

Value of New Buildings Completed, by Type of Building, 1970-71
(\$'000)

Local Government Area (Statistical Division in Bold Type)				Houses	Flats	Shops	Fac- tories	Educa- tion Facilities	Other Build- ings
Hobart	(H)	..	..	1,522	2,721	1,121	202	897	3,888
Glenorchy	(H)	..	..	3,027	542	56	3,011	592	857
Clarence	(H)	..	..	4,702	446	115	164	383	294
Brighton	(SE) (H)	..	..	103	..	..	..	22	..
Glamorgan	(SE)	..	..	140	..	..	..	..	25
Green Ponds	(SE)	..	..	13	..	..	..	..	..
Richmond	(SE)	..	..	31	..	..	..	..	49
Sorell	(SE) (H)	..	..	247	..	..	..	18	170
Spring Bay	(SE)	..	..	97	..	7	..	..	21
Bruny	(S)	..	..	21	..	..	..	..	..
Esperance	(S)	..	..	92	..	..	..	..	43
Huon	(S)	..	..	91	..	..	3	103	55
Kingborough	(S) (H)	..	..	1,094	58	35	28	154	795
New Norfolk	(S) (H)	..	..	380	25	36	524	147	404
Port Cygnet	(S)	..	..	24	..	..	..	28	8
Tasman	(S)	..	..	39	4	..	44	..	204
Hobart	..	..	..	10,734	3,793	1,364	3,837	2,196	6,402
South Eastern	..	..	..	348	..	7	..	18	95
Southern	..	..	..	540	4	..	140	131	313
Launceston	..	..	..	807	421	170	185	646	2,033
North Central	..	..	..	807	421	170	185	646	2,033
Burnie	..	..	..	1,380	190	140	242	328	1,647
Circular Head	..	..	..	461	..	5	24	..	278
Deloraine	..	..	..	176	8	..	48	27	34
Devonport	..	..	..	1,788	33	332	140	104	633
Kentish	..	..	..	92	..	..	26	25	..
King Island	..	..	..	303	..	29	21	62	419
Latrobe	..	..	..	386	12	..	721	..	1,303
Penguin	..	..	..	311	..	..	..	16	24
Ulverstone	..	..	..	889	52	30	37	46	48
Wynyard	..	..	..	704	23	..	68	43	93
North Western	..	..	..	6,487	318	535	1,326	652	4,479
Beaconsfield	..	..	..	898	16	..	..	..	1,250
Fingal	..	..	..	29	..	..	10	..	87
Flinders	..	..	..	54	..	..	..	21	53
George Town	..	..	..	695	22	..	1,392	..	305

Value of New Buildings Completed, by Type of Building, 1970-71—continued
(\$'000)

Local Government Area (Statistical Division in Bold Type)	Houses	Flats	Shops	Fac- tories	Educa- tion Facilities	Other Build- ings
Lilydale	486	..	22	127	52	195
Portland	126	10	..	17	84	102
Ringarooma	23	..	..	..	..	5
Scottsdale	245	34	..	..	..	23
North Eastern	2,554	82	22	1,546	157	2,020
Evandale	42	..	..	..	..	19
Longford	96	..	..	30	..	121
St Leonards	1,480	148	..	91	50	59
Westbury	250	16	..	..	38	41
North Midland	1,867	164	..	121	88	239
Bothwell	11	..	..	..	..	2
Campbell Town	8	..	..	..	58	..
Hamilton	42	..	..	..	210	55
Oatlands	36	..	..	..	..	10
Ross .. .. .	..	..	..	..	..	..
Midland	95	..	..	..	268	67
Gormanston .. .. .	..	..	..	..	..	28
Queenstown	154	..	..	25	43	106
Strahan	10	29	..	..	..	..
Waratah	252	..	..	21	18	45
Zeehan	611	6	..	250	43	779
Western	1,027	35	..	296	104	957
Total Tasmania	24,459	4,816	2,097	7,451	4,259	16,602
Urban Hobart	10,057	3,754	1,236	3,351	1,956	5,681
Urban Launceston	3,764	601	192	398	770	2,291

FINANCIAL ASSISTANCE FOR HOUSING

The State Housing Department

General

The Housing Department was established in July 1953 as a separate authority to administer that portion of the *Homes Act* 1953 which relates to the purchase and development of land for housing, and the erection of homes for rental and sale. Funds for these purposes are made available under the Commonwealth-State Housing Agreement; the funds form part of the State's annual loan borrowings (but are excluded from the State Public Debt). The Department uses both day labour and private contractors and has its own factory for timber storage, milling and joinery manufacture in addition to plumbing and electrical workshops, etc. Most dwellings constructed are three-bedroom timber or brick veneer units, usually roofed with tiles or corrugated iron. Flats for elderly persons, multi-unit flats and two-bedroom villa units have also been constructed.

Departmental Construction of Dwellings

During 1969-70, 536 dwellings (508 houses and 28 elderly persons' units) were completed. The following table shows the aggregate of dwelling units produced by the Housing Department (and by an earlier State housing construction authority) since 1944:

**Aggregate of Dwellings Constructed by State Housing Department
From 1944 to 30 June 1970 (a)**

Type of Dwelling	Bed-Sitting Room	One Bedroom	Two Bedroom	Three Bedroom	Total
Single Unit—Timber .. ..	..	..	565	8,739	(b)9,304
Other Material .. ..	..	..	5	2,101	2,106
Elderly Persons' Flatettes ..	147	143	..	..	290
Maisonettes .. ..	..	..	12	10	22
Multi-unit Flats (Individual Units) .. ..	..	125	157	14	296
Total Dwelling Units	147	268	739	10,864	12,018

(a) Construction to 30 June 1953 undertaken by Housing Division of State Agricultural Bank; subsequent construction by State Housing Department.

(b) Includes fifteen three-bedroom and three two-bedroom timber houses constructed for rental purposes under the *Fire Damage Relief Act 1967*.

Dwellings for Rental

Flats, maisonettes and elderly persons' homes are for rental only. Although generally houses are allotted on a purchase-contract basis, they may under certain circumstances be rented. The weekly rental of a newly erected three-bedroom timber house in the Hobart metropolitan area approximated \$19.80 in the June quarter 1971. In certain necessitous cases, rental rebates are allowed. Rebates on rentals of elderly persons' flatettes are graduated according to the incomes of the occupiers. Under the current rental rebate formula a married couple whose only income is the age pension pay \$3.80 while a single person solely dependent on the pension pays \$2.00 a week. (These rates were those current in June 1971.)

Dwellings for Sale

Sales are made on a no deposit purchase-contract basis with repayments over a maximum term of 53 years but buyers are encouraged to pay a deposit if they are in a position to do so. When the agreed purchase price and other charges have been paid ownership of the property is transferred from the Department to the purchaser. Purchase contracts are sometimes surrendered to the Department; when this happens any equity which may have been established in the property is forfeited. Purchasers may sell their homes in certain circumstances. The aggregate number of purchase contracts less surrenders entered into by 30 June 1971 was 8,209. The sale price, excluding land, of a new three-bedroom Department house in the Hobart metropolitan area was approximately \$9,800 in the September quarter 1971. Elsewhere prices tend to be slightly lower.

The weekly repayment instalment for a dwelling is less than the weekly rent of a similar dwelling because a purchaser is responsible for maintenance.

Amounts outstanding in respect of loans made by the Housing Department by way of purchase contracts are shown in the following table:

Housing Department: Purchase Contracts at 30 June

Loans Outstanding	1966	1967	1968	1969	1970
Number	5,781	6,163	6,631	7,099	7,435
Value \$'000	37,452	40,583	44,708	48,940	52,199

The interest rate at 30 June 1971 was six per cent, the immediate previous rate being $5\frac{1}{2}$ per cent. To be eligible for purchase contract terms an applicant must be married, or about to be married, or have dependants for whom it is necessary to provide a home. Date of application, number of dependants, income and existing accommodation are considered in determining applicants' priorities.

Agricultural Bank of Tasmania—Advances to Homebuilders

Housing Function

The Agricultural Bank, as an approved institution under the Commonwealth-State Housing Agreement, receives part of Commonwealth housing funds for advances to home builders. Prior to the commencement of the agreement (1956), the Bank borrowed from the State Loan Fund and from private institutions. To be eligible for a loan, an applicant must be married or about to be married or have dependants for whom it is necessary to provide a home, and be over the age of 21 years; he must also own a block of land. The maximum amount of an advance is \$9,000 for all types of houses, provided that the total advance does not exceed 90 per cent of the Bank's valuation of land and dwelling cost. Advances are repayable by equated instalments over a period of up to 31 years. Advances made since 1 July 1970 have been at seven per cent, immediately prior to which the rate was six per cent.

The following table shows details for recent years:

Agricultural Bank: Advances for Housing (a)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
Advances Approved—					
Number	279	219	338	274	322
Value \$'000	2,159	1,737	2,708	2,250	2,840
Advances Outstanding (b) \$'000	14,930	16,172	17,697	19,184	20,939

(a) Excludes advances to building societies.

(b) At end of period.

The Agricultural Bank also acts as agent for the State in the transmission of advances under the Commonwealth-State Housing Agreement to the co-operative building societies; details of such advances and of the building societies appear in Chapter 11, 'Finance'.

Following the bushfire disaster of February 1967, the Bank was required to administer a separate scheme providing finance for home owners who wanted to build homes to their own design. Advances at 30 June 1970 totalled \$319,446.

The Commonwealth Department of Housing

General

The Department has four main functions: (i) to assist certain ex-servicemen to obtain housing with finance made available on a term of up to 45 years at an interest rate of $3\frac{3}{4}$ per cent; (ii) to administer the Homes Savings Grant Scheme; (iii) to advise the Federal Minister on the Commonwealth-State Housing Agreements; and (iv) to advise on the administration of the Housing Loans Insurance Scheme. A further function is to provide and manage self-contained furnished accommodation for migrant families. Tenancy of the accommodation is limited to six months.

War Service Homes Loans

Broadly, to be eligible for a loan, an ex-serviceman must have dependants, and must have volunteered for, or had, overseas service. Also, he must not be the owner of a home at the time of seeking a loan. The following table shows

details of War Service Homes activities in the provision of finance for Tasmanian housing. Transfers of loans (and of course houses) between borrowers are not shown as expenditure, nor are details given of additional loans advanced for alterations, etc. to homes already subject to War Service Homes finance.

War Service Homes Operations: Homes Financed in Tasmania

Year	Loans Approved (a)	Homes Financed			Expenditure
		Homes Purchased (b)	Homes Built	Mortgages Discharged (c)	
	no.	no.	no.	no.	\$'000
1965-66	252	167	35	24	1,562
1966-67	184	107	25	37	1,170
1967-68	187	108	15	47	1,195
1968-69	180	123	13	41	1,350
1969-70	181	127	6	32	1,300
1970-71	217	133	9	49	1,530

(a) Loans *approved* are not necessarily paid out in the same year. A transfer from one borrower and a resale to another is included as a loan approved but not included elsewhere.

(b) New or existing properties not previously subject to War Service Homes finance.

(c) Mortgages, raised by individuals to build homes, discharged by the Division on satisfactory completion of the home.

Homes Savings Grant Scheme

The scheme was introduced by the Commonwealth Government in 1964 to encourage young people to save for their first marital home. ('Young' means under 36 years at the time of signing the contract.)

The maximum grant (a gift) is \$500; the actual amount is assessed on the amount saved and the time and rate of saving up to the signing of a contract to build or buy a home. The following table details grants made since inception of the scheme:

Home Savings Grants in Tasmania

Year	Grants Approved for—			Grants Made—	
	Home Purchase	Contractor Construction	Owner Construction	Number	Value
	no.	no.	no.		\$'000
1965-66	341	240	174	760	325
1966-67	395	172	117	684	273
1967-68	458	205	121	784	305
1968-69	442	212	101	755	300
1969-70	432	208	76	716	297
1970-71	638	264	101	947	370

Housing Loans Insurance Corporation

The Housing Loans Insurance Corporation was established by the Commonwealth *Housing Loans Insurance Act* 1965-1966 to administer the Housing Loans Insurance Scheme under which approved lenders may be insured against losses arising from the making of housing loans. The Corporation consists of

a Chairman (who is also Managing Director) and a Deputy Chairman, who are full-time members and three part-time members, all of whom are appointed by the Governor-General.

The main purpose of the Housing Loans Insurance Scheme is to assist people to borrow, as a single loan at a reasonable rate of interest, the money they need and can afford to re-pay to obtain a home suited to their requirements.

To encourage the making of high-ratio loans the Corporation will insure loans up to 95 per cent of valuation for houses, or 90 per cent for home units with the maximum amount of loan being \$30,000. A once-and-for-all premium of 1½ per cent of the amount of the loan is charged by the Corporation for loans of from 90 per cent to 95 per cent of valuation. For loans below 90 per cent of valuation, lesser premium rates apply. The premium is payable by the borrower, but lenders may agree to add it to the amount of the loan for repayment by the borrower over the duration of the loan.

The maximum rate of interest that may be charged on insured loans (June 1971) is 8½ per cent per annum and the maximum period for repayment is 40 years for houses and 35 years for home units. The maximum rate of interest is kept under continuing review and may be varied by the Corporation, with the concurrence of the Minister for Housing, whenever changes appear to be warranted by movements in interest rates generally.

The Housing Loans Insurance Corporation insures loans that are made for a wide range of purposes in addition to the purchase or construction of a dwelling. The other purposes include alterations, extensions or improvements to a dwelling and the provision or improvement of roads, kerbing and foot-paths.

An insured loan may be made only by an approved lender. Approved lenders are appointed by the Corporation from within approved classes of lenders specified by the Federal Minister for Housing. The approved classes include banks, building societies, co-operative housing societies, friendly societies, life insurance companies, general insurance companies, trustee companies and solicitors' and superannuation funds.

The Housing Loans Insurance Corporation commenced its insurance operations in November 1965 and to 30 June 1971 had insured loans in Tasmania amounting to \$28.1m.

The following table shows, for a three-year period, the number of loans insured, their purpose and amount:

Housing Loans Insurance Corporation
Loans Insured in Tasmania

Purpose of Loan	1968-69		1969-70		1970-71	
	Number	\$'000	Number	\$'000	Number	\$'000
Housing—						
Building a New House ..	79	722	74	702	83	801
Purchase of—New House ..	94	919	87	906	80	833
Used House ..	496	4,146	452	4,032	641	5,542
Discharge of Mortgage ..	19	151	31	285	21	182
Home Units	3	28	3	35	11	127
Other	12	87	5	52	7	54
Total	703	6,053	652	6,012	843	7,539

Chapter 10

EDUCATION AND CULTURAL ACTIVITIES

EDUCATION IN TASMANIA

Introduction

In 1869, Tasmania became the first colony in the British Empire to make education compulsory. The ages for obligatory attendance at school were progressively widened until, in 1946, Tasmania became the only Australian State to make attendance compulsory up to the age of sixteen, the starting age being six.

Education in Tasmania is now provided at primary, secondary and tertiary levels by government institutions and to secondary level by non-government schools.

A period of 82 years in which the State accepted no financial responsibility for non-government education ended in 1967 when amendments to the *Education Act 1932* allowed government grants to independent schools.

The task of Tasmanian educational authorities, as in other Australian States in the post-war period, has been to provide more schools, more teachers and better facilities; the principal factors exerting pressure have been: (i) a rapidly growing school population; (ii) a change in attitude resulting in increased demand for secondary and tertiary education; and (iii) community acceptance in general of the need for better education.

The sections that follow deal with: (i) education in government and non-government schools; (ii) advanced education; (iii) university education; (iv) technical education; and (v) adult education.

Schools, Government and Non-Government

General

In 1946 the Tasmanian government and non-government systems of education were reorganised to provide a three, four or five-year post-primary course. (The pre-war system of secondary education had comprised two stages, a three-year course followed by a two-year course; with a leaving age of fourteen, and with *selective entry* to government high schools, the proportion of pre-war pupils taking secondary education was very low.)

The dual nature of educational responsibility in Tasmania and the numbers of pupils in both government and non-government schools, in primary and secondary grades, are shown in the following table:

Government and Non-Government Schools
Pupils Enrolled at 1 August According to Grade of Education
(Number)

Particulars	1966	1967	1968	1969	1970
Government Schools—					
Primary Grades	48,759	49,827	50,603	51,658	51,677
Secondary Grades	22,962	23,659	24,765	25,900	26,895
Special	740	779	741	781	813
Total	72,461	74,265	76,109	78,339	79,385
Non-Government Schools—					
Primary Grades	8,621	8,633	8,675	8,381	8,293
Secondary Grades	6,122	6,280	6,272	6,328	6,302
Special (a) .. ..	..	..	27	31	28
Total	14,743	14,913	14,974	14,740	14,623
Total All Schools ..	87,204	89,178	91,083	93,079	94,008

(a) Prior to 1968 non-government 'Special School' pupils were included under primary and secondary grades.

The State (or Government) School System

Introduction

The present system had its genesis in the *Education Act* 1885, under which a department was established, headed by a Director of Education, responsible to a Minister. Under the Act, aid to non-government schools was abolished and only in 1967 was this principle re-introduced (with a system of capitation subsidies).

Education is compulsory between the ages of six and sixteen years although, in some cases, special exemptions may be obtained. Virtually all schools are co-educational. Education is secular and free; parents buy their childrens' books, paints, instruments, etc. Pupils' transport is either provided by the Department or subsidised where daily travel costs on public transport exceed ten cents. The arrangement of transport has been important in the organisation of area, district and high schools where educational facilities are concentrated and centralised, thereby eliminating the smaller country schools.

Present Organisation

Under the Director-General operate three Directors designated: (i) primary; (ii) secondary; and (iii) technical. Superintendents are responsible for specific activities and districts; supervisors assist in administration and provide services to schools. Specialist sections deal with curricula, teaching aids, science equipment, speech education, music, physical education, guidance and welfare, school libraries, educational planning and research, etc.

Expenditure on Education

The following table shows educational expenditure by the State Government from the public account; in its Trust Funds expenditure, the State largely acts as agent for the Commonwealth.

**Expenditure on Education from Consolidated Revenue, Loan Fund and Trust Funds
(\$'000)**

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
From Consolidated Revenue—					
Teacher Training	1,124	1,354	1,614	1,800	2,099
Primary Education	5,867	6,481	7,165	r 7,854	8,951
Secondary Education	6,080	6,633	7,274	8,809	9,922
Tertiary Education—					
Technical	946	1,047	1,013	1,129	1,215
Advanced			400	583	716
University	1,332	1,438	1,637	1,788	2,038
Special Schools for Handi- capped Children	1	266	248	r 289	324
Other	r 3,104	r 3,379	r 3,788	r 3,120	3,553
Total	r 18,454	r 20,598	r 23,142	r 25,372	28,818
From Loan Fund (a)—					
Primary Education	1,011	867	1,268	1,493	1,169
Secondary Education	2,352	936	1,224	1,093	1,125
Tertiary Education—					
Technical	740	243	290	—81	275
Advanced					156
University	143	1,121	295	592	1,216
Other	191	894	1,029	1,280	1,527
Total	4,438	4,061	4,106	4,377	5,467
From Trust Funds	2,506	2,160	2,560	3,452	3,612
Grand Total	25,398	26,813	29,808	33,201	37,897

(a) Net expenditure.

It should be noted that the preceding table includes amounts voted under other departmental heads for the provision of educational facilities, principally rental and tenancy charges, water, sewerage and rates paid by the Lands and Surveys Department.

The following table gives a dissection of expenditure on education from State Consolidated Revenue:

**Expenditure on the Education Department (a) and Non-Government Schools
from Consolidated Revenue Fund
(\$'000)**

Particulars	1967-68	1968-69	1969-70
Salaries, Wages and Allowances—Administrative Staff..	753	778	921
Teaching Staff	15,605	16,211	18,397
Payroll Tax	409	425	483
Maintenance of Schools and Other Properties	440	459	494
Lighting, Heating, Water and Sanitary Charges	360	372	408
Conveyance and Fares of Pupils	1,683	1,770	1,894
Materials and Equipment (including Schools Library Service)	644	605	664
Capitation Grants to Non-Government Schools	200	199	352
Grants for Adult Education	145	148	158
Other (b)	693	716	857
Total Expenditure	20,932	21,683	24,628

(a) Excludes expenditure on Technical and Advanced Education and the University of Tasmania.

(b) Includes office requisites, rents, rates, travelling expenses, furniture, allowances, free supplies to pupils, etc.

Enrolment

Enrolments in government schools in the last five years were:

Government Schools
Number of Pupils at 1 August According to Sex

Pupils					1966	1967	1968	1969	1970
Boys	..	..	..	..	37,742	38,592	39,624	40,725	41,319
Girls	..	..	..	..	34,719	35,673	36,485	37,614	38,066
Total	..	..	..	..	72,461	74,265	76,109	78,339	79,385

Age of Pupils in Each Class

The following table summarises the system of government schooling in Tasmania showing the average ages of pupils in each class and the type of certificate issued for final year examinations:

Government Schools
Average Age of Pupils, Primary and Secondary, in each Class and Certificates Issued

Primary Schools (including Primary Classes of District and Area Schools)				Secondary Schools (including High Schools and Secondary Classes of District and Area Schools)			
Grade	Mean Age at 1.8.70		Year	Mean Age at 1.8.70		Certificate Issued	
	Years	Months		Years	Months		
Pre-School ..	4	10	1 ..	12	9	..	
Kindergarten ..	5	5	2 ..	13	10	..	
1	6	8	3 ..	14	10	Preliminary School	
2	7	9				Certificate	
3	8	9	4 ..	15	9	School Certificate	
4	9	9	5 (a) ..	16	8	Higher School Cer- tificate	
5	10	9	6 (a) ..	17	9		
6	11	9					

(a) Secondary years five and six indicate pupils in their first or second year at Higher School Certificate level.

Number of Government Schools

The following table shows the number of government schools providing secondary, primary and pre-school education in Tasmania.

Number of Government Schools at 1 August

Type of School	1966	1967	1968	1969	1970
Pre-School	56	59	58	58	(a) 45
Primary	138	137	136	140	143
Primary with Secondary Classes	14	13	10	9	8
Special	15	16	15	15	15
Area (b)	35	35	35	35	35
District (b)	6	7	7	8	6
High	29	28	27	27	28
Matriculation Colleges ..	1	2	3	3	3
Total	294	297	291	295	283

(a) See text below next table for explanation of change.

(b) These schools provide both primary and secondary facilities.

Pre-School Centres

Until 1969, pre-schools were established on the initiative of groups of parents, the Department providing the cost of the building but eventually recovering half its outlay from the parents. Commencing in 1969 all new facilities for pre-school education are being provided in kindergartens attached to primary schools. The Department trains and pays the teachers who control their own programmes; it subsidises or meets most other costs.

Children from $3\frac{1}{2}$ to $5\frac{1}{2}$ years may attend pre-schools which are considered by the Department as valuable in personality development. The following table shows the number of teachers and enrolled pupils at the centres:

Pre-Schools: Teachers and Pupils at 1 August

Particulars	1966	1967	1968	1969	1970
Teachers—					
Full-time	51	57	66	68	(a) 43
Part-time	11	12	4	4	9
Pupils	2,447	2,632	2,862	2,635	1,938

(a) See text below for explanation of change.

The high pupil-teacher ratio in the previous table is reduced in practice by attendance of pupils in half-days or on occasional days. Classes do not exceed 35 pupils. Several pre-schools have been taken under the control of the infants departments of nearby primary schools, resulting in a decrease in pre-school enrolments with a corresponding increase in kindergarten enrolments. This trend is expected to continue.

State Primary Schools

State Infants Schools and Infants Classes: Infants schools and infants classes in all primary schools, cater for children for one, two or three years, depending on facilities available, age at entry, and pre-school experience. Kindergarten classes are provided at many primary schools for children below the age of $5\frac{1}{2}$.

The following table shows the number of boys and girls in kindergartens and infants classes:

Enrolments in Government Infants Schools and Infants Grades at 1 August

Year	Kindergarten	Grade 1	Grade 2	Total
Boys				
1966	1,137	4,895	3,820	9,852
1967	1,164	5,011	3,714	9,889
1968	1,315	4,985	3,966	10,266
1969	1,687	4,824	4,055	10,566
1970	2,148	4,674	3,893	10,715
GIRLS				
1966	1,061	4,482	3,516	9,059
1967	1,116	4,458	3,584	9,158
1968	1,228	4,337	3,789	9,354
1969	1,656	4,197	3,750	9,603
1970	2,069	4,116	3,574	9,759

Primary Classes: The majority of government primary schools have six grades only, without kindergartens attached; a few have secondary grades as well. In general, parents may select the school they prefer for their children without restriction but, in some areas, zoning directs children to attend a particular primary school.

Thirty-five area schools and six district schools have primary grades and draw many pupils from outlying localities previously served by one or two-teacher schools. Free transport has made this possible and has led to a reduction in the total number of primary schools.

Primary Curriculum: The primary school curriculum has undergone considerable changes in recent years both in teaching methods and subject matter. The subjects are English (including reading, spelling, oral and written work), history, geography, arithmetic, science, art, music, arts and crafts, religious and moral education, and health and physical education.

Pupil Grouping: Promotion within the schools is generally by age at the beginning of the school year, with accelerated progress or repetition of classes at the headmaster's discretion; grouping is by ability, where numbers allow, with each child being able to work with his equals in each subject, regardless of chronological age. *Differential teaching* adapts the school programme to meet the widely varying needs and abilities of pupils. The skill subjects of reading, writing, spelling and arithmetic are particularly suited to this method of teaching, testing and grading. One school has experimented widely with *non-grading*, a method of organisation which allows pupils in certain subjects to work at their own level of competence. A few other schools have adopted this organisation in one or two subjects only.

Primary Pupils: The table below shows the age and number of pupils receiving primary education in Tasmanian government schools:

Age and Number of Pupils Receiving Government Primary Education (a) at 1 August

Age Last Birthday (Years)	1966	1967	1968	1969	1970
Under 7	12,984	13,282	13,368	13,644	13,566
7	7,081	7,153	7,442	7,445	7,174
8	6,926	7,060	7,395	7,633	7,449
9	6,568	6,946	7,098	7,313	7,498
10	6,874	6,682	6,807	7,069	7,283
11	5,953	6,340	6,222	6,400	6,620
12	2,084	2,124	2,088	1,943	1,924
13	266	219	170	192	142
14	22	19	12	15	12
15 and Over	1	2	1	4	9
Total—Boys	25,295	25,827	26,295	26,831	26,800
Girls	23,464	24,000	24,308	24,827	24,877
Pupils	48,759	49,827	50,603	51,658	51,677

(a) Includes pupils in pre-schools, infants schools and infants grades.

Special Schools and Special Classes

The Department has special schools, and also special classes in ordinary schools, for children who are physically handicapped, mentally retarded, or otherwise unable to profit from ordinary class teaching. Instruction varies according to the handicap; where it is physical, the main need is to maintain normal or near-normal individual programmes. Many pupils eventually can be transferred to ordinary schools into the grades appropriate to their ages.

Schools and classes for slow learners and mentally retarded children follow the curricula for pre-schools and primary schools and no attempt is made to reach examination standards. The teaching of activities and basic skills is the main concern in these classes which are to be found in some primary and high schools.

State Secondary Schools

Almost all children attend secondary classes, starting at an age varying from 11½ to thirteen years. If a choice has to be made between a high and an area school a transfer committee considers the matter taking note of performance in grade VI. High schools are non-selective, comprehensive and, with two exceptions, co-educational.

The differences between the types of secondary school are related mainly to the level of the final examination or certificate available to students. The levels under the recently re-organised system are: School Certificate endorsed Preliminary (three-year course); School Certificate (four-year course); Higher School Certificate (five or six-year course). The School and Higher School Certificates replace the Secondary Schools, Schools Board and Matriculation Certificates which were last awarded in 1968.

The essence of the new system is: (i) all assessment and certification comes under a single authority, a newly constituted Schools Board of Tasmania; (ii) two certificates only are issued; and (iii) the new certificates record achievement in *subjects* and are not *group* certificates as in the old system. The new certificates are:

The School Certificate: awarded in subjects for three and four-year courses; basis of award is by internal assessment and recommendation by schools.

The Higher School Certificate: awarded in subjects studied in fifth or sixth secondary year; basis of award is an external examination conducted by the Board (not the University as for matriculation in the past). The University is still free to determine what constitutes qualification for university entrance and can nominate the subjects and the levels of achievement at the Higher School Certificate examination necessary for entry; the scope of the examination can also be enlarged to cover subjects not designed primarily for purposes of university entrance.

A more detailed account of the new examinations and procedures adopted for awarding the School and Higher School Certificates is contained in a later section, 'Examinations'.

The following table shows the age and number of students in Tasmanian government secondary schools:

Age and Number of Pupils Receiving Government Secondary Education at 1 August

Age Last Birthday (Years)				1966	1967	1968	1969	1970
11	..	..	..	359	433	365	(a) 453	(a) 518
12	..	..	..	3,853	4,119	4,536	4,457	4,756
13	..	..	..	5,718	5,753	6,140	6,519	6,262
14	..	..	..	5,927	6,111	5,968	6,242	6,503
15	..	..	..	4,336	4,586	4,664	4,950	5,107
16	..	..	..	1,852	1,744	2,070	2,188	2,408
17	..	..	..	702	681	774	862	1,047
18 and over	..	..	..	215	232	248	229	294
Total—Boys				11,995	12,294	12,875	13,442	14,022
Girls				10,967	11,365	11,890	12,458	12,873
Pupils				22,962	23,659	24,765	25,900	26,895

(a) Includes boys under eleven years: one in 1969; four in 1970.

The next table shows the number of secondary pupils by sex and class in all government schools:

Secondary Pupils in Government Schools by Class at 1 August

Year	Secondary Year						Total
	1	2	3	4	5	6	
Boys							
1966 ..	3,392	3,319	2,885	1,659	392	348	11,995
1967 ..	3,445	3,234	3,069	1,696	474	376	12,294
1968 ..	3,691	3,297	2,970	1,912	557	448	12,875
1969 ..	3,646	3,586	3,041	2,050	616	503	13,442
1970 ..	3,668	3,541	3,260	2,191	797	565	14,022
GIRLS							
1966 ..	3,220	3,093	2,711	1,368	352	223	10,967
1967 ..	3,213	3,133	2,897	1,491	418	213	11,365
1968 ..	3,421	3,125	2,963	1,635	486	260	11,890
1969 ..	3,354	3,362	2,937	1,952	555	298	12,458
1970 ..	3,292	3,283	3,145	2,067	696	390	12,873

Area Schools

These cater for children following mainly non-academic courses leading to preliminary awards by internal assessment in subjects of the School Certificate after three years. There is a bias towards agriculture, technical subjects and home arts, the aim being to provide training for the environment in which the child is likely to find himself on leaving school. The English course is framed to help children write and speak fluently and mathematics is concerned largely with practical examples. There has been an amount of experimental work in these schools, especially in programmed learning, and mainly in mathematics.

Subjects for the School Certificate are available to pupils in some primary schools with secondary classes, in all area and district schools, and in all high schools.

Government Matriculation Colleges

In 1965, the Hobart High School became the Hobart Matriculation College, no junior students having been enrolled after 1960. The Launceston High School reached this stage in 1967. At these colleges, students are exclusively concerned with Higher School Certificate subjects undertaken as one or two-year courses which in 1969 replaced the Matriculation group certificate courses. The Higher School Certificate is awarded in individual subjects. The third college opened in the Hobart area in 1968, and the elimination of junior students was completed by 1970. A new college is currently being constructed to serve Hobart's eastern suburbs and is expected to take its first pupils in 1973. Students may also attempt Higher School Certificate subjects at high schools in Burnie and Devonport. Subsidised transport and hostels assist many students attempting the Higher School Certificate.

The advantage claimed for matriculation colleges is that they concentrate, in the one centre, teachers who are specialists in this field; further, the students benefit to the extent that the colleges are an intermediate step between the disciplined high school and the university.

Correspondence School

This school offers a wide variety of courses at the primary and post-primary levels, and provides instruction for adults as well as children. Valuable assistance is given to pupils in secondary classes of some primary schools and area schools to assist them to achieve School Certificate standard.

The courses available include all primary and most secondary subjects: mathematics, English literature and history at the Higher School Certificate stage; English for New Australians; and courses for adults with special problems such as illiteracy.

Teachers and Teacher Training

There is a variety of courses available to trainee teachers in this State. The University of Tasmania awards the Diploma of Education after one year of a post-graduate course or the Certificate of Education after a two-year undergraduate course. The Hobart and Launceston teachers colleges provide two-year and three-year courses for primary and infants teachers. For secondary school teachers, the two teachers colleges provide a four-year mathematics and science course; also, the Hobart college provides a three-year commercial course and the Launceston college a three-year home arts course. Other teaching courses are at the University (three-year physical education), the Conservatorium of Music (three-year course), the Tasmanian School of Art, the Hobart Technical College, the Victorian School of Speech Therapy, etc.

With the assistance of the Standing Committee on Teacher Education, a number of important decisions on planning for the future of teacher training was taken in 1969, including approval for the incorporation of the Hobart Teachers College into the Tasmanian College of Advanced Education. A decision was also made to expand provisions for the training of secondary teachers in teachers colleges.

The following table shows the number of teachers in Tasmanian government schools:

Number of Government School Teachers at 1 August 1970 (a)

Type of School	Full-time			Part-time		
	Males	Females	Persons	Males	Females	Persons
Pre-School .. .. .	..	43	43	..	9	9
Special	18	68	86	..	10	10
Primary	260	1,146	1,406	3	105	108
Primary with Secondary Classes ..	11	23	34	2	4	6
Area	146	307	453	12	53	65
District	40	68	108	4	7	11
High (b)	805	629	1,434	14	66	80
Teachers Colleges	38	25	63	37	13	50
Technical Colleges	153	28	181	529	111	640
School of Art	9	1	10	8	15	23
Conservatorium of Music ..	8	..	8	9	4	13
Total	1,488	2,338	3,826	618	397	1,015

(a) Excludes teachers in non-teaching positions (e.g. curriculum branch staff, guidance officers, and speech education, music and teaching aids centres, etc.) and 79 teachers on leave without pay.

(b) Includes matriculation colleges.

In the primary schools in 1970, 83 per cent of the teachers were women, and the available men usually taught grades V and VI. All subjects are taught by each teacher in these schools but itinerant teachers, when available, take physical education, music and speech classes on a circuit basis with each teacher being responsible for the teaching of the subject in several schools. In the post-primary schools, most teachers are specialists attached to subject departments within each school. In area and district schools, one teacher may take several subjects and agriculture, home arts and crafts and technical subjects are handled by resident or itinerant specialists as available.

The following table shows the number of teachers and teachers-in-training in Tasmania:

Full-Time Teaching Staff in Government Schools (a) and Teachers-in-Training at 1 August

Type of Teacher	1966	1967	1968	1969	1970
Head Teachers—					
Males	236	240	229	232	241
Females	7	9	13	12	12
Other Teachers—					
Males	1,063	1,055	1,084	1,104	1,119
Females	1,991	2,115	2,185	2,237	2,330
Monitors (b)—					
Females	10	11	..	..	..
Total Teachers (a)—Males	1,299	1,295	1,313	1,336	1,360
Females	2,088	2,135	2,198	2,249	2,342
Teachers-in-Training—					
Males	299	321	344	355	405
Females	614	679	712	773	763

(a) Includes teachers in non-teaching positions (e.g. curriculum branch staff, guidance officers etc.) but excludes those engaged in teacher training and technical education, and part-time teachers.

(b) Appointment of monitors ceased in 1967.

Teachers Colleges, etc.: The institutions where teachers-in-training are studying are shown in the next table:

Teachers-in-Training at 1 August

Institution Attended	1966	1967	1968	1969	1970
MALES					
Teachers College—Hobart	30	23	36	45	56
Launceston	23	28	28	49	55
University of Tasmania	227	244	250	226	249
School of Art	12	13	12	9	13
Tasmanian Conservatorium of Music	5	5	8	5	4
Other Institutions	2	8	10	21	28
Total	299	321	344	355	405

Teachers-in-Training at 1 August—*continued*

Institution Attended	1966	1967	1968	1969	1970
FEMALES					
Teachers College—Hobart	133	154	172	212	212
Launceston	159	170	186	215	211
University of Tasmania	264	308	312	298	287
School of Art	21	16	17	24	34
Tasmanian Conservatorium of Music ..	14	17	14	16	13
Other Institutions	23	14	11	8	6
Total	614	679	712	773	763

Non-Government (or Independent) Schools*Introduction*

Non-government schools have played a valuable part in Tasmanian education. Policies are framed by headmasters in conjunction with their senior staff and with the approval of their governing bodies or church. There can be freedom to experiment and to diversify courses if desired and this is shown by the number of subjects available to students.

Registration

Non-government schools and teachers have to conform with the regulations of the Teachers' and Schools' Registration Board. This Board consists of nine members who hear and determine all applications for registration and keep a record of all teachers and schools not administered by the Education Department. Every school is graded and teachers are registered in one or more classifications or as special subject teachers. 'Provisional' teachers are those gaining qualifications so they can be registered. The Board may prescribe the mode of classifying teachers, the course of study and training required, the examinations to be passed, and the recognition of overseas qualifications. To secure registration, schools must provide for proper access, drainage, light, ventilation and sanitary conveniences, and inspections may be made by officers appointed by the Board. A daily register of attendance has to be kept.

State Assistance to Non-Government Schools and Pupils

The *Education Act* 1932 was amended in 1967 to provide for direct payments to non-government schools, the amount being calculated on a capitation basis; the subsidies are paid on the number of pupils enrolled as at 1 August each year; for 1971-72 the amounts were \$24 per annum per primary pupil; \$34 per annum per secondary pupil up to fourth-year level; and \$54 per annum per pupil at fifth and sixth-year level. The 1970-71 appropriation was \$355,000. From the beginning of 1970, the Commonwealth has also provided per capita grants to independent schools. Details are contained in a later section dealing with Commonwealth activities in education. State legislation passed in June 1970 provides for subsidies related to building loans interest.

Apart from these subsidies, benefits include matriculation allowances; secondary scholarships; free or subsidised transport; use of the facilities of the Department's Curriculum, Teaching Aids, Speech Education and Guidance Branches; attendance at trade and domestic science classes if room is available and attendance by teachers at Departmental schools of method. Equipment can be purchased at favourable rates through the Supply and Tender Department.

Enrolment at Non-Government Schools

Most non-government school pupils are in schools controlled by religious denominations as the next table shows.

**Non-Government Schools and Pupils at 1 August
(Number)**

Particulars			Church of England	Pres- byterian	Catholic (a)	Seventh Day Adventist	Other Schools	All Schools
PUPILS								
1966	..	Boys	1,004	273	5,063	63	680	7,083
		Girls	839	314	5,529	65	913	7,660
1967	..	Boys	1,050	314	5,105	70	697	7,236
		Girls	840	324	5,578	55	880	7,677
1968	..	Boys	1,029	335	5,061	74	748	7,247
		Girls	860	303	5,539	70	955	7,727
1969	..	Boys	1,003	303	4,968	80	770	7,124
		Girls	825	329	5,446	75	941	7,616
1970	..	Boys	969	280	4,896	70	812	7,027
		Girls	788	302	5,420	76	1,010	7,596
SCHOOLS								
1970	..	..	4	2	50	4	8	67

(a) Includes one 'Special School'.

Of the 30 schools in 1970 which catered for secondary pupils, nineteen had Higher School Certificate classes. They have a tradition of comprehensive type schooling but increased applications for entry have imposed some element of selectivity. Preference is usually given to children of past pupils or brothers and sisters of current pupils.

Most independent school pupils are to be found in primary classes, and most of these are in Catholic schools. The following table shows the ages and numbers of all pupils in non-government school primary and sub-primary classes:

**Age and Number of Pupils Receiving Non-Government Primary Education (a) at
1 August**

Age Last Birthday (Years)				1966	1967	1968	1969	1970
Under 7	..	..	..	1,905	2,182	2,293	2,182	2,254
7	..	..	..	1,191	1,229	1,201	1,193	1,097
8	..	..	..	1,189	1,182	1,184	1,128	1,138
9	..	..	..	1,202	1,172	1,201	1,163	1,131
10	..	..	..	1,214	1,214	1,217	1,170	1,165
11	..	..	..	1,104	1,176	1,112	1,047	1,094
12	..	..	..	556	399	394	396	365
13	..	..	..	210	60	62	93	46
14	..	..	..	37	13	9	8	2
15 and Over	..	..	..	13	6	2	1	1
Total—Boys				4,159	4,194	4,161	4,051	3,978
Girls				4,462	4,439	4,514	4,330	4,315
Pupils				8,621	8,633	8,675	8,381	8,293

(a) Excludes the primary grade elements of 27 special school pupils in 1968, 31 in 1969 and 28 in 1970.

The following table shows the age of pupils in the independent schools at secondary level:

**Age and Number of Pupils Receiving
Non-Government Secondary Education (a) at 1 August**

Age Last Birthday (Years)	1966	1967	1968	1969	1970
11	95	129	160	(b) 158	159
12	887	915	1,039	1,040	1,059
13	1,253	1,306	1,256	1,255	1,268
14	1,317	1,385	1,275	1,284	1,286
15	1,196	1,216	1,252	1,177	1,160
16	871	835	792	905	795
17	394	404	387	410	460
18 and Over	109	90	111	99	115
Total—Boys	2,924	3,042	3,086	3,073	3,049
Girls	3,198	3,238	3,186	3,255	3,253
Pupils	6,122	6,280	6,272	6,328	6,302

(a) Excludes the secondary grade elements of 27 special school pupils in 1968, 31 in 1969 and 28 in 1970.

(b) Includes one ten-year old boy.

The following table shows the number of secondary pupils by sex and class in all non-government schools:

Secondary Pupils in Non-Government Schools by Year at 1 August 1970

Pupils	Secondary Year						Total
	1	2	3	4	5	6	
Boys ..	642	571	683	567	338	248	3,049
Girls ..	704	767	663	662	302	155	3,253
Total	1,346	1,338	1,346	1,229	640	403	6,302

Examinations

Introduction

The Schools Board of Tasmania was constituted on 31 October 1944 by the *Education Act* 1944 to devise and govern new systems of awarding school certificates.

In 1946 the school leaving age in Tasmania was raised to sixteen years and the Board instituted a four-year course of academic secondary education leading to the Schools Board Certificate. The Intermediate Examination, which had been conducted by the University at third-year secondary school level until 1938, had been replaced by similar examinations conducted by the State Education Department and the Associated Public Schools. These were replaced by the Schools Board Certificate, studied at fourth-year level, in 1946.

This Schools Board Certificate demanded a level of achievement in basic and optional subjects after a four-year course of general education. Secondary schools were allowed the choice between an accrediting system or an external examination.

As a result of the proposals of the Schools Board and the Radford Report, the Schools Board was re-constituted with a membership of twenty-one on 1 September 1966, to allow the Board to become, in 1969, the sole examining and certifying body at the secondary level.

An important change of considerable significance to employers, and to the prerequisites they demand of applicants for employment, concerns the new type of certificate introduced in 1969. There are only two such certificates issued, known as the School Certificate and the Higher School Certificate. These replaced all previous certificates: the Schools Board Certificate, the Secondary Schools Board Certificate of the Education Department and the Matriculation Certificate of the University of Tasmania are no longer issued. The previous certificates were *group* certificates, demanding in varying degrees of detail, certain compulsory subjects or groups of subjects as a prerequisite to the award of the certificate. The essential difference is that both of the new certificates are *subject* certificates requiring no compulsory subjects or groups of subjects to be studied.

The Higher School Certificate is issued on the basis of an external examination conducted in December each year but for the School Certificate there are no external examinations and awards are determined by internal assessment with a wide variety of methods of evaluation. A system of regional moderation has been implemented by the Schools Board to ensure comparability of standards between schools. (*See the later section outlining the organisation of Moderation procedures.*) Final results of the School Certificate are notified to candidates in December by the Principal of the School attended by the candidate. Each candidate receives a printed result slip showing the level of study and the award given in each subject. The formal certificate is issued by the Schools Board of Tasmania.

The School Certificate

The subjects for this certificate may be taken at various levels and a wide choice is available to cater for different levels of ability and interests. A preliminary award (P) may be granted after the third year of secondary education to those candidates who leave school at this stage. The full award is granted to successful candidates who complete four years of study in the subject.

The following table sets out the range of subject levels together with approximate former equivalent standards and awards made at each level:

School Certificate Subject Levels

Subject Level	Standard Approximates to:	Level of Achievement Awarded (a)
1(P)	Secondary Schools Board 1968: three year syllabus ..	Credit, Pass, Lower Pass
I	Level 1(P) with a fourth year added	
II	Schools Board 1968: one-point syllabus	
III	Schools Board 1968: two-point syllabus	

(a) A failure is not recorded on the certificate.

In comparison, the Schools Board Certificate was studied at fourth year high school and subjects were at two levels: (i) one-point, the level of subject achievement being credit or pass; (ii) two-point, the level of subject achievement being credit, pass or lower pass.

The Higher School Certificate

This is taken at the end of the fifth or sixth year of secondary education. Individual subjects may be attempted at Level II or Level III.

Former equivalent standards and awards are shown in the following table:

Higher School Certificate Subject Levels

Subject Level	Standard Approximates to:	Level of Achievement Awarded (a)
II	1968 Matriculation syllabus: Ordinary level	Credit, Pass
III	1968 Matriculation syllabus: Advanced level	Credit, Pass, Lower Pass

(a) A failure is not recorded.

The former Matriculation Certificate was studied at fifth or sixth year secondary school. The levels of subject study were: (i) ordinary level, the level of subject achievement being ordinary level pass; (ii) advanced level, the level of subject achievement being credit, advanced or ordinary level pass.

From 1970, some Level III subjects have been studied in two divisions—Division 1 and Division 2; eventually all Level III subjects will be studied on this basis. A student must study both divisions to qualify for a full Level III award. Students who study only one division will be given an award at Level III (p), where (p) signifies either a preliminary or part study of the syllabus. Students may sit for examination in both divisions in the one year or in separate years.

Requirements for matriculation are determined by the University of Tasmania from the results of Level II and Level III subjects of the Higher School Certificate examinations conducted by the Schools Board of Tasmania.

State Organisation of Moderation Procedures

The Schools Board of Tasmania is the body responsible for awarding the secondary school awards (the School and Higher School Certificates) discussed in the previous section. The Schools Board is also responsible for ensuring development of satisfactory moderation procedures and the maintenance of subject standards. To this end, the State is divided into eight *moderation regions*. Moderation is the method used to ensure reasonable comparability of standards between schools throughout the State.

Committee for Moderation of Standards: This body determines subject standards and reviews moderation procedures. Members of the committee include representatives from the Schools Board, superintendents of high schools and representatives from independent schools and the teachers' union—the Teachers' Federation.

Regional Council: Operations of the scheme for moderation of standards are reviewed by the Council which recommends variations to the scheme to the Schools Board. Members include secondary school superintendents and school principals in the region and the chairman is appointed by the Schools Board from members of the Committee for Moderation of Standards.

Moderation Advisory Committee: Moderation procedures are planned in detail by the Committee which also investigates problems in particular subject fields. The chairman of the Committee for Moderation of Standards is also the chairman of this body; other members include the members of the Committee for Moderation of Standards and the chief moderators.

State Moderation Committee: The committee promotes the flow of ideas on moderation between regions and identifies and resolves problems connected with particular subjects. The chief moderator in each subject is chairman and the remaining members are the regional moderators (eight) in each subject.

Regional Moderation Committee: Application of moderation procedures within the region is the responsibility of this Committee. Chairmanship is vested in the regional moderator; other members are subject moderators from each school in the region.

As well as the various committees there are a number of positions, mostly filled by teachers, which are basic to the successful operation of the system. The following briefly outlines the functions associated with each position:

Chief Moderator: Appointed by the Schools Board and responsible for the co-ordination of moderation procedures between regions in each subject field.

Regional Moderator: Appointed by the Schools Board on the recommendation of the Regional Executive Committee. A regional moderator is appointed in each subject field. The duties associated with this position include: (i) maintaining contact between subject moderators within the region and ensuring satisfactory subject standards; and (ii) informing subject moderators of current developments in their subject and in the field of assessment.

School Moderator: This position will normally be held by the school principal. The school moderator's duties include: (i) appointing school subject moderators; (ii) determining the results of each School Certificate candidate in his school and submitting award recommendations to the Schools Board; (iii) communicating result sheets (showing percentage scores of students on test materials) to the Schools Board for distribution to the Regional Moderation Committees; and (iv) informing the Regional Executive Committee of names of teachers willing to accept nomination for the position of regional moderator.

Subject Moderator: Appointed by the school principal. The duties include: (i) supervising all details of assessment in his subject for the award of the School Certificate; and (ii) informing the Regional Moderation Committee of proposed assessment plans.

Other Education Matters

Various functions of the Education Department are described in the following section; some of which are applicable to both government and non-government schools.

Equipment

The Department maintains an active interest in the development of teaching method and of teaching aids. The Teaching Aids Centre provides specialised assistance to schools. A library of 16mm films, film strips and coloured slides and records are distributed on loan. The records are mainly used for music appreciation, poetry and languages. Printed aids, mainly in the form of charts and booklets, are provided (e.g. charts for cursive writing and booklets for the Cuisenaire system). Audio-visual aids (tape recorders, film projectors, centralised radio systems, strip and sound projectors, television receivers, etc.) are bought by the Centre and re-sold to the schools with a \$ for \$ subsidy given by the Department. Repair and maintenance of this equipment is done free of charge by the Centre. Specialised electronic equipment has been developed and produced, e.g. auditory training equipment for deaf students. A talks studio with recording equipment and tape duplicating facilities operates to prepare language laboratory programmes and the recording of schools broadcasts.

A number of students' books are produced for sale to schools by both the Education Department and the Australian Broadcasting Commission.

Libraries

These have been built up in most schools, with Departmental subsidies matching local funds up to levels determined by the size of the school. A new Central Library Service Branch offers bibliographic and technical advice to schools on library development. The library service, in conjunction with the Curriculum Branch, exercises control over comprehensive book and resource material displays.

Educational Radio and Television

All schools have receivers; lessons are frequently co-ordinated with the scheduled programmes arranged by liaison between the Department and the Australian Broadcasting Commission.

Radio and Television Programmes

Radio: All schools in the State use one or more of the programmes provided. In most primary schools programmes are taken direct from the air, but secondary schools use a tape service provided by the Education Department Teaching Aids Centre. The Centre records all secondary programmes and distributes the tapes on loan to schools which would otherwise have trouble fitting programmes into school timetables. Some primary programmes are also recorded for schools in poor reception areas.

Television: Tasmania leads the Commonwealth in the availability and use of educational television. Every government and non-government school within a television reception area is equipped with at least one receiver. The schools have a standard issue of one free set each and extra sets may be purchased. For extra sets the State Government provides a subsidy equal to 50 per cent of the purchase price. The maximum use of television is made by primary schools where timetables are quite flexible; many secondary schools have difficulty in planning timetables so that classes may view programmes. For this reason great interest is being shown in experiments with video-recording which, it is hoped, will make television as flexible an educational aid as taped radio.

Selection of Programmes: Curriculum Officers and teachers are represented on the Planning and Appraisal Committees for all Tasmanian produced programmes. The committees also assist with selection of series from other sources.

Staff: Apart from technical staff the A.B.C. employs the State Supervisor of Education (Schools Broadcasts), two radio producers, two television producers and associated staff. The Education Department provides a Liaison Officer and Studio Teachers, seconded full-time to the A.B.C.

Safety Officers

Transport Commission officers visit the schools regularly to give lectures and practical demonstrations. Special efforts have been made to increase the safety of child cyclists. Warnings have also been given on the dangers associated with firearms, explosives, dangerous drugs, etc. Driver education courses are given in some schools, a type of training likely to be extended.

Parents and Friends Associations

While a major function of these bodies is fund-raising for the provision of subsidised equipment and library books, they also act as a valuable forum for discussion on education.

Migrant Education

This is arranged by the Department at certain schools or by combined radio-correspondence lessons, the aim being the teaching of English. The cost of migrant education is reimbursed by the Commonwealth Government.

The School Milk Scheme

Free milk is available to all children under thirteen years attending government and non-government primary and infants schools, pre-school centres, creches, child-minding centres and orphanages. One-third of a pint of milk is supplied daily, the cost being born by the Commonwealth. In 1970, the cost of milk supplied was \$511,195.

Bursaries

A system of bursaries exists to assist pupils in post-primary government and non-government schools. Junior bursaries, which may be held for four years, are awarded to pupils under the age of thirteen who live in areas where the required type of secondary education is not available. Senior bursaries are awarded on the results of a competitive examination for pupils under seventeen.

There were 65 junior bursaries held during 1970, at a cost to the Bursaries Board of \$8,291. Eleven junior bursaries were awarded for 1971. The Bursaries Board fund is made up of moneys from the Government and private donations.

Allowances are paid to all pupils in fourth, fifth and sixth years of post-primary education if parents' income does not exceed \$75 per week (subject to variation if there are additional children).

Advanced Education in Tasmania*Origins of Advanced Education*

The pace and complexity of society has accelerated since the beginning of the twentieth century and is continuing to do so at an increasing rate. To meet the demands of a modern society a new type of educated person is required.

It is envisaged that the colleges of advanced education will provide tertiary education and training with a vocational emphasis, as distinct from the academic education provided by universities although the Tasmanian College will be able to confer degrees in appropriate disciplines. In some States advanced education is being developed from existing technological institutions but in Tasmania and the Australian Capital Territory separate colleges are being established.

Finance

The colleges are to receive financial support from the Commonwealth Government on the basis of \$1 for every State \$1 spent on capital works and \$1 for every State \$1.85 spent on recurrent expenses. For the triennium 1970-72 the Tasmanian College will receive from all sources \$6.5m for capital purposes and \$6.73m for recurrent expenditure.

Advanced Education Council

The passing of the Tasmanian *Advanced Education Act* 1968 opened the way for the establishment of the College of Advanced Education. The act provided for a Council of Advanced Education to administer education at the professional level other than in the University of Tasmania. The Council is made up of a Chairman, Vice-Chairman and nine other members. In addition, the Registrar of the College of Advanced Education acts as Secretary to the Council.

Establishment

Following a national seminar on planning for Colleges of Advanced Education held in Hobart at the end of 1967 the educational specifications and a master plan for the Mt Nelson college were prepared. In June 1969 the contract was let for the Resource Materials Centre (stage one of the project). Work began on the Schools of Education, Engineering and Applied Sciences during the 1970-72 triennium. The principal of the College and the heads of the schools of education and engineering were appointed in 1971; it is anticipated that the first on-site lectures will be given in 1972.

Courses

A wide variety of courses will be available at the college when it is completed. Facilities will be provided for the Tasmanian School of Art, School of Dental Nursing, Conservatorium of Music, Hobart Teachers College and professional level courses presented by the Hobart Technical College. Diploma level courses at the Launceston and Burnie Technical Colleges also come within the system.

These courses are currently conducted at their present locations under the auspices of the Advanced College of Education scheme and, except for those available at Launceston and Burnie, will be transferred to the College buildings on completion of the Mount Nelson complex.

The following tables show student enrolments in courses conducted under the advanced college scheme:

Advanced Education: Enrolments (a) by Course, 1970
(Number)

Course	Full-time		Part-time		Total	
	Males	Females	Males	Females	Males	Females
Accountancy	20	2	287	8	307	10
Applied Chemistry	1	..	70	4	71	4
Architecture	8	1	43	2	51	3
Art—Fine	7	16	8	72	15	88
Graphic	9	11	4	1	13	12
Teachers	15	42	5	3	20	45
Business Administration .. .. .	..	..	30	..	30	..
Dental Nursing .. .. .	..	29	..	..	..	29
Engineering—						
Civil	2	..	79	..	81	..
Electrical .. .. .	..	..	50	..	50	..
Mechanical	2	..	58	..	60	..
Management .. .. .	..	..	3	..	3	..
Medical Laboratory .. .. .	..	..	23	10	23	10
Metallurgy	4	..	25	1	29	1
Music	2	12	5	5	7	17
School Music	6	18	1	1	7	19
Pharmacy	17	14	10	3	27	17
Public Administration .. .. .	..	..	38	..	38	..
Quantity Surveying .. .. .	..	..	4	..	4	..
Radiography .. .. .	..	..	..	6	..	6
Town and Country Planning .. .. .	..	..	17	..	17	..
Valuation .. .. .	..	..	25	1	25	1
Total	93	145	785	117	878	262

(a) Excludes enrolments at Hobart Teachers College.

The next table shows student enrolments for a three-year period:

Advanced Education: Enrolments (a)
(Number)

Description	1968			1969			1970		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
Full-time ..	82	115	197	81	137	218	93	145	238
Part-time ..	809	72	881	791	136	927	785	117	902
Total ..	891	187	1,078	872	273	1,145	878	262	1,140

(a) Excludes enrolments at Hobart Teachers College.

University of Tasmania

History

The University of Tasmania was founded in 1890 and was the fourth to be established in Australia. When teaching began in 1893 with three lecturers and six students it occupied four acres of land on the Queen's Domain at Hobart.

Growth of the University was slow for the first half century despite the State's progressive policy in education generally. The Faculties of Arts, Science and Law were established originally with Commerce added in 1919 and Engineering in 1922. At the outbreak of World War II, the teaching staff in many departments consisted of one full-time professor or lecturer, possibly with part-time assistants.

After the war, the influx of ex-servicemen filled all Australian universities to capacity and student enrolments in Tasmania rose to 740 in 1947. Financial assistance from both State and Commonwealth Governments enabled the staff to be almost doubled between 1945 and 1950 and energetic research schools developed. A Faculty of Education was established with responsibility for some of the State's teacher training. In 1957 came the Murray Report on the Australian Universities, leading to a significantly increased flow of Commonwealth money into Australian universities generally. Since 1958 the main developments at the Tasmanian University have been the establishment of the Faculties of Agricultural Science and Medicine.

Government of the University

The governing body of the university is the Council, consisting of three members appointed by the teaching staff, four by the graduates through Convocation, one by the undergraduates, two by the two Houses of Parliament, four by the Governor, and three by the Governor on the recommendation of the Council. The Director of Education and the Chairman of the Professorial Board are *ex-officio* members. The Chancellor is chairman as he is constitutionally and ceremonially the senior member of the University and the chief executive officer is the Vice-Chancellor.

Finance

The following table shows the income and expenditure of the University of Tasmania for a three-year period:

University Income and Expenditure (a)
(\$'000)

Particulars	1968	1969	1970
INCOME			
Government Grants—			
Commonwealth	1,663	1,679	2,043
State	1,766	1,945	2,245
Student Fees	631	686	882
Other (b)	342	311	331
Total	4,402	4,621	5,500
EXPENDITURE			
Teaching and Research	3,082	3,327	3,970
Administration	436	452	510
Libraries	320	335	397
Other (c)	612	593	720
Total	4,451	4,707	5,596

(a) Excludes receipts for capital purposes and capital expenditure.

(b) Includes donations, accommodation fees for halls of residence, etc.

(c) Includes repairs, alterations, rents, power, light, heating, etc.

Staff and Students

The next table shows the teaching staff and courses in which students were enrolled:

University Staff and Enrolments, 1970

Teaching Staff (Full-Time)		Gross Student Enrolments (a)				
Particulars	Number	Course	New Enrolments, 1970	Total Enrolments		
				Males	Females	Total
Professors	30	Masters' and Doctors' Degrees	30	134	20	154
Associate Professors and Readers	22	Bachelor Degrees—				
Senior Lecturers and Lecturers	107	Agricultural Science	24	73	11	84
Demonstrators and Tutors	43	Arts	327	522	568	1,090
		Law	62	159	27	186
		Economics	112	304	29	333
		Medicine	59	146	50	196
		Science	162	394	98	492
		Engineering	56	191	1	192
		Total	802	1,789	784	2,573
		Non-Degree Courses—				
		Education	n.a.	99	105	204
		Public Administration	n.a.	15	..	15
		Other (b)	n.a.	101	77	178
		Total	n.a.	215	182	397
Total	202	Total All Courses	n.a.	2,138	986	3,124

(a) Students enrolled in more than one course are shown in each course for which enrolled. The number of individual students enrolled was 3,119.

(b) Of the 178 enrolments classified as 'other' eleven were students taking a master degree preliminary course and the remaining 167 enrolments include students enrolled in one or more subjects but not proceeding to a degree or diploma of the University. The figures include candidates for non-University awards, e.g. Diploma of Music, Physical Education, Pharmacy and Tasmanian Teacher's Certificate.

The following table shows the number of teaching staff and students in selected years:

University Teaching Staff and Students Enrolled

Particulars	1945	1965	1966	1967	1968	1969	1970
Teaching Staff (Full-time)							
Professors	12	20	r 26	26	28	r 30	30
Others	31	125	r 137	138	141	r 163	172
Total Staff ..	43	145	r 163	164	169	r 193	202
Individual Students Enrolled	503	2,083	2,346	2,443	2,592	2,830	3,119

Degrees Conferred

The following table shows degrees conferred:

University of Tasmania: Degrees Conferred (a)

Degree (b)	1965	1966	1967	1968	1969	1970
B.Agr.Sc. Males	..	..	5	7	7	11
.. .. Females	..	..	..	1	..	..
B.A. Males	53	64	56	65	r 88	90
.. .. Females	61	56	87	104	r 126	119
B.Ec. Males	15	19	26	33	r 40	48
.. .. Females	1	3	..	2	r 6	3
B.E. Males	21	13	17	22	28	23
.. .. Females	..	2	..	..	..	..
B.Sc. Males	49	63	50	r 64	r 76	92
.. .. Females	8	12	8	12	r 27	21
LL.B. Males	11	10	17	18	26	14
.. .. Females	..	2	1	1	1	6
M.A. Males	4	2	2	..	2	4
.. .. Females	..	1	1	1	1	3
Ph.D. (Science) .. Males	5	6	5	9	8	12
.. .. Females	1	..	..	1	..	..
M.Sc. Males	1	1	3	3	6	3
.. .. Females	..	..	..	..	..	..
Other Males	2	4	1	4	6	5
.. .. Females	..	1	..	..	..	..
Total Males	161	r 182	182	225	287	302
.. .. Females	71	r 77	97	122	r 161	152

(a) Excluding honorary degrees.

(b) Bachelor degrees include bachelor degrees with honours.

Residential Colleges

There are five residential colleges in the University. Christ College was affiliated with the University in 1933, moved to new premises on the University Campus at Sandy Bay in 1962 and provides accommodation for 142 single students and tutors, plus four married tutors and their families. The College Board decided to admit women students to the College in 1971. It still caters for a few Anglican theological students. Hytten Hall was opened in 1959 accommodating 120 students. Extensions have raised this figure to 193 male students accommodated in 79 single study bedrooms and the remainder in double rooms. St John Fisher College, opened in 1962, accommodates 72 male students in single study-bedrooms and is under the direction of the Catholic Church. Jane Franklin Hall was founded by the Tasmanian Council of Churches

in 1950 as a hall of residence. The hall provides accommodation for 160 female students. Ena Waite College was opened in 1968 and accommodates 22 female students.

Buildings

The present University site at Sandy Bay was chosen in 1944 and a number of army-type huts were erected to accommodate temporarily the rapidly growing Science departments. The first permanent building at Sandy Bay was occupied in 1957. Now the majority of departments are in permanent buildings with extensions either completed or planned for many of the original buildings.

Work commenced in 1971 on several major building projects including extensions to the Administration and Chemistry buildings. Other projects currently being planned include a new building near Mt Rumney for teaching and research in astronomy and astrophysics and various building extensions.

Technical Education

Government technical colleges operate at Hobart, Launceston, Devonport and Burnie and provide technical and trade courses. Professional courses provided at the Technical Colleges are now given under the auspices of the Tasmanian College of Advanced Education. Part-time students attend classes, providing largely trade work for apprentices, at Queenstown, Rosebery and Smithton. Students are charged fees but apprentices receive free training.

Courses

Technician Courses: These do not aim to reach the standard of professional courses, nor are they directed towards acquiring skill in a trade but are intermediate between the two. They are designed to meet the needs of industry in which there is a growing demand for technicians. On successful completion of a course, a certificate is awarded by the Education Department. Commerce, draughtsmanship, health inspection, hotel management, shorthand-typing and merchandising are examples of the large number of courses available. They are also called *certificate courses*.

Trade Courses: These are designed to complement trade experience and to lead the apprentice to skill in his craft. From 1965, apprentices have been required to attend one full day per week for three years; this has eliminated many evening classes. A certificate of trade proficiency is issued by the Department and courses are available in most trades. Post-trade or journeyman courses are also provided.

Technical Correspondence Courses: These are administered through the Hobart Technical College and are given when attendance at technical classes is not practicable. In 1970, 419 apprentices and others made use of these courses.

Technical Education—Miscellaneous

Fees: In 1970, fees were approximately \$24 for certificate and trade courses. Apprentices receive training without charge.

Enrolments: In 1970, part-time enrolments comprised 93 per cent of the total technical college enrolment of 8,278. The full-time students attended accountancy, art, pharmacy or day commercial classes. Fifty-four per cent of the total enrolment was at the Hobart College and 22 per cent at the Launceston College. Sixteen per cent were attempting diploma or post-diploma courses; 33 per cent certificate or post-certificate courses; 40 per cent trade or post-trade courses; and eleven per cent miscellaneous subjects. Seventy-four per cent were males.

College Councils: These are appointed locally and represent local trades and industries, professions and municipal councils. They supervise and act as advisory bodies.

Examinations: These are conducted by the Education Department in November each year and supplementary examinations are held in December. Papers are set and marked, or assessments carried out, by outside examiners. In 1967, first-year apprentice examinations were conducted internally; this was extended to second-year level in 1968.

Technical Teachers, Students and Expenditure

The following table shows the numbers of schools, teachers and students engaged in senior technical education, and the yearly expenditure (details for the School of Art and the Conservatorium of Music are included):

Technical Education: Teachers, Students and Expenditure					
Particulars	1966	1967	1968	1969	1970
NUMBER					
Schools, Colleges, etc.	11	10	9	9	9
Teachers—Full-time	154	173	181	186	199
Part-time	591	614	710	627	676
Students—Aggregate (a) ..	7,962	8,200	8,296	8,336	8,278
\$'000					
Expenditure (b)	954	1,044	1,375	1,764	2,025

(a) Gross number enrolled during the year.

(b) Excludes capital expenditure on new buildings, etc.

Adult Education

Origin and Organisation

Establishment of a mechanics' institute in Hobart in 1827 was the start of adult education in Australia. The mechanics' institute movement which was then just three years old (there were only two other institutes at that time: in London and Glasgow) was the fore-runner of the present adult education organisation in Tasmania which began in 1914. One part-time tutor was appointed and three classes started in 1914 with support for the new system coming from the University of Tasmania and the Workers' Educational Association. Financial assistance was given by the State Government.

The present Adult Education Board was established under the *Adult Education Act 1948*.

The Board has nine members. Three of these are nominated by the Minister for Education and one each nominated by: University of Tasmania; the State Library Board; the Workers' Educational Association; the Arts Council; the Australian Broadcasting Commission; and the Education Department. The Board has a Director and nine professional officers (five of them in charge of administrative areas designated 'regions').

Hobart has three adult education centres, in the central city, at South Hobart and at North Hobart; Launceston has two centres, while Devonport and Burnie have one each. 'The Grange', a National Trust home at Campbell Town (south of Launceston) is the Board's residential college.

Operations

Courses: The year is divided into autumn, winter and spring terms and classes are usually organised into ten-session courses lasting one term. Some courses, such as those for languages, continue through three terms and short courses, lasting three to five sessions, are arranged to meet specific needs, such as preparing income tax returns, investment or preparing for examinations. The 713 courses offered in 1970 attracted 9,091 students and required 312 part-time tutors. Subjects included art, zoology, philosophy, psychology, languages, music, shorthand and communication.

Lectures: Visitors from other States and overseas deliver lectures during each year. One of the most important events of the Adult Education year is the Sir John Morris Memorial Lecture. (Each year an Australian who has achieved world stature in a particular field is invited to deliver this lecture, instituted by the Adult Education Board as a memorial to Sir John Morris, its first chairman, who died in 1956.)

Residential School: The Grange residential college has been leased from the National Trust since 1964. Built in 1847, The Grange is an elegant colonial country house used for both weekend schools throughout the year and week-long summer schools during the Christmas-New Year vacation. The house offers accommodation for 27 students.

Drama: Assistance is given to more than 30 amateur drama groups throughout the State to assist in raising standards of acting and production. The Board has a drama officer and experienced tutors who help the groups with rehearsals and productions. One-day schools, weekend schools and ten-week courses in drama are also offered. Services to amateur groups are subsidised by the Board which also sponsors visits to the State by personalities and groups, mainly from overseas, who might not otherwise come to Tasmania. Visits by Emlyn Williams, Joyce Grenfell, the Vienna Boys' Choir and the Scots Guards Band have been organised in recent years.

Book Discussion Groups: Nearly 50 of these groups throughout the State meet regularly each month to discuss specially chosen books, mainly novels. Discussions are guided by notes about each book prepared by Adult Education officers. The groups receive a carton each month containing books and notes which are distributed to members and the groups then meet, often in private homes, to discuss the books. Each year more books are injected into the scheme as others lose appeal.

Other Activities: Seminars, forums, art exhibitions, music recitals and displays are also organised. The Board has been responsible for several publications including 'Launceston—History of an Australian City'.

The following table shows the annual receipts and expenditure on selected items for a five-year period:

Adult Education: Selected Receipts and Expenditure
(Source: Annual Reports of the Auditor-General)
(£)

Item	1965-66	1966-67	1967-68	1968-69	1969-70p
RECEIPTS					
State Government Grant ..	127,000	122,000	145,000	148,000	158,000
Student Fees	35,862	38,694	46,333	50,189	55,074
Concert Tours, Film Screenings, Lectures, etc.	21,102	15,742	24,790	18,077	35,751
Other	1,864	1,885	2,569	3,349	4,717
Total	185,828	178,321	218,692	219,615	253,542

Adult Education: Selected Receipts and Expenditure—continued
(Source: Annual Reports of the Auditor-General)
(\\$)

Item	1965-66	1966-67	1967-68	1968-69	1969-70 _p
EXPENDITURE					
Salaries	78,011	86,885	101,917	104,781	109,788
Tutors' Fees, Allowances ..	36,844	35,880	41,458	45,304	50,304
General Administration ..	25,817	28,101	34,926	34,832	45,314
Schools, Seminars and Ex- hibitions	20,932	22,476	16,707	22,130	15,017
Visiting Artists	6,770	445	11,354	1,739	12,997
Other	11,312	11,174	12,332	9,922	9,914
Total	179,686	184,961	218,694	218,708	243,334

Commonwealth Activities in Education

Introduction

Although education is primarily the responsibility of the States, the Commonwealth has instituted a number of measures to provide direct assistance to educational institutions and students.

Commonwealth activities in education include grants for universities, colleges of advanced education, teachers colleges, technical training, science and library facilities at government and non-government secondary schools, per-capita grants to non-government schools and assistance for research. Commonwealth Scholarship Schemes provide assistance for students undertaking secondary, technical, tertiary and postgraduate studies. Two schemes of assistance for Aboriginal students are financed from the Aboriginal Advancement Trust Account.

The Commonwealth grants to universities and colleges of advanced education are made in accordance with Commonwealth-State matching formulae involving agreed expenditure by the States. The Commonwealth acts alone in the matter of grants for: (i) the construction of teachers colleges, provided that ten per cent of available places are filled by students not bonded to State education departments; (ii) technical training facilities; (iii) science facilities; (iv) school library facilities; and (v) pre-school teacher training facilities.

The following table shows the amounts paid by the Commonwealth Government for education in Tasmania over a three-year period:

Commonwealth Payments for Education in Tasmania
(\$'000)

Particulars	1967-68	1968-69	1969-70
RECURRENT EXPENDITURE			
Universities	1,200	1,315	1,504
Colleges of Advanced Education	138	222	397
Research Grants	158	194	182
Aboriginal Advancement .. .. .	..	..	7
Per Capita Grants, Non-Government Schools ..	..	..	286
Total	1,496	1,731	2,376

Commonwealth Payments for Education in Tasmania—continued
(\\$'000)

Particulars	1967-68	1968-69	1969-70
CAPITAL EXPENDITURE (a)			
Universities	627	902	757
Colleges of Advanced Education	52	69	677
Teachers Colleges—Primary and Secondary	360	960	250
Pre-School .. .. .	..	100	120
Science Laboratories—Government Schools	242	235	82
Non-Government Schools	178	174	174
Technical Training	335	275	376
School Libraries—Government Schools .. .. .	..	72	65
Non-Government Schools .. .. .	..	..	74
Total	1,794	2,787	2,575
SCHOLARSHIP ALLOWANCES (a)			
Commonwealth Scholarships—Post-Graduate	63	77	97
University	349	411	555
Advanced Education	19	20	43
Secondary	178	174	180
Technical	25	30	33
Soldiers' Children Education Scheme (b)	104	128	141
Aboriginal Study Grants .. .. .	..	..	1
Total	738	840	1,050
TOTAL EXPENDITURE			
All Items	4,028	5,358	6,001

(a) Excludes grants made under the Commonwealth Child Migrant Education Programme which are not available on a State basis.

(b) Includes payments to eligible children before their admission to the scheme as reimbursement for books, school requisites and fares.

University of Tasmania

In the triennium 1970-72, proposed Commonwealth payments to the University of Tasmania are to total \$7.57m, consisting of \$1.88m for capital costs, \$5.57m for recurrent expenditure and \$125,000 in special grants.

Colleges of Advanced Education

Proposed Commonwealth payments for the period 1970-72 are to total \$5.62m, made up of \$3.25m for capital costs, \$2.36m for recurrent expenditure and \$12,000 for library materials. The major Tasmanian project is the construction of a College of Advanced Education at Mt Nelson which was commenced in 1969 and is expected to open in 1972. The College will take control of all diploma courses at the Hobart, Launceston and Burnie Technical Colleges and already controls the Tasmanian School of Art and the Tasmanian Conservatorium of Music.

Technical Training Facilities

Commonwealth grants are made to extend and improve facilities for training apprentices and technicians. From 1968-69 to 1970-71, annual grants of \$325,400 were made to Tasmania.

Science Facilities

Commonwealth grants have been made since July 1964 to assist in the construction and equipping of science teaching facilities in government and non-government schools. The total planned distribution for the four years ending 30 June 1975 is: government schools, \$990,660; and non-government schools, \$668,630.

Teachers Colleges and Pre-School Teacher Education

The Commonwealth Government provided \$1.5m for the construction of a new teachers college at Launceston, which was opened by the Federal Minister for Education and Science in October 1969. The scheme of unmatched grants for construction and equipping of teachers colleges has been extended to June 1973 and Tasmania will receive \$1m under the scheme for further facilities at Launceston Teachers College.

As the Tasmanian Government assumes responsibility for pre-school teacher training the Federal Government has granted the State \$220,000 for this purpose. The grant will be used to provide pre-school teacher education facilities at Launceston Teachers College.

Research Projects

In May 1965, the Australian Research Grants Committee was established to advise the Commonwealth Government on the granting of money for research projects. In 1966 the Commonwealth and State Governments each allocated \$2m (a total of \$4m) for Australian research projects. Because the States decided not to make further contributions, the Commonwealth made \$9,471,000 available in the 1967-69 triennium and \$13,255,000 in the 1970-72 triennium.

Research grants awarded to the University of Tasmania are as follows: 1967, \$148,552; 1968, \$225,503; 1969, \$163,086; 1970, \$155,261; 1971, \$166,269.

Secondary School Libraries

In August 1968, the Commonwealth announced a programme which provided \$27m in the 1969-71 triennium for the development of Australian secondary school libraries. The funds are available for: (i) the erection, alteration or extension of library buildings; and (ii) the provision of furniture, equipment and basic stock of books and instructional materials. The allocation for Tasmania for each year of the triennium 1969 to 1971 was \$290,900 comprising: (i) government schools \$216,200; (ii) Catholic schools \$43,200; (iii) other non-government schools \$31,500.

The Commonwealth intends to increase the total secondary school libraries grant to \$30m for the triennium commencing on 1 January 1972.

Lady Gowrie Child Centre

This pre-school demonstration and research centre in Hobart was established by the Commonwealth in 1940. It is concerned with a study of the factors promoting or retarding physical and mental health in young children and in demonstrating an educational health programme based on the developing needs of children aged three to six years. The Centre is used for observation by students of medicine, psychology, education, domestic science and nursing.

Per Capita Grants to Independent Schools

From the beginning of the 1970 school year, the Commonwealth has provided per capita grants to independent schools throughout Australia, including special schools for the handicapped; rates are \$35 for each primary student and \$50 for each secondary student. Expenditure in Tasmania in the 1970 school year was \$556,000.

Curriculum Development

Tasmania is participating in the Australian Science Education Project which evolved from the earlier Junior Secondary Science Project. It is the first national curriculum project to be established in Australia under government sponsorship and is financed by contributions from the Commonwealth Government (through the Department of Education and Science) and from all State education departments. Over a five-year period, commencing 1968-69, the Commonwealth will provide \$750,000 and the States, \$450,000.

Migrant Education

Under the Child Migrant Education Programme which commenced in April 1970, the Commonwealth is financing over a five-year period for government and non-government schools:

- (i) the salary costs of teachers employed to teach migrant children in special classes and the necessary supervisory staff;
- (ii) special training courses for teachers in the methods of teaching English as a foreign language;
- (iii) the provision of approved capital equipment for special classes; and
- (iv) the provision of suitable learning and teaching materials.

Two centres have been set up (one each in Hobart and Launceston) for migrant children from Tasmanian government schools, while one non-government school in Launceston also has special classes of migrant children. The Tasmanian teachers employed in this work were trained at special courses held in Melbourne.

Commonwealth Scholarship Schemes

The Commonwealth Government makes payments to students under the following five Commonwealth Scholarship Schemes:

Commonwealth University Scholarship Scheme: This scheme provides assistance to students taking approved degree courses at an Australian university. Selection is based upon results obtained in Tasmania in the Higher School Certificate examination or in an approved degree course. In Tasmania, approximately 370 awards are made each year. Benefits include the payment of all compulsory fees and, subject to a means test, a living allowance of up to \$700 per annum for a student living with his parents, or up to \$1,100 for a student living away from home.

Commonwealth Advanced Education Scholarship Scheme: Under this scheme assistance is provided to those taking approved tertiary level courses in Australia. Selection in Tasmania is based on results obtained in the Higher School Certificate examination in an approved course or in some cases on other criteria determined by individual institutions. Approximately 80 awards are made each year in Tasmania. Benefits are the same as those payable under the Commonwealth University Scholarship Scheme. Under both schemes, a guidance service is provided by the Commonwealth Department of Education and Science.

Commonwealth Secondary Scholarship Scheme: Each year approximately 320 Tasmanian secondary school students are awarded a two-year scholarship to assist them with study for the Higher School Certificate examination. Annual scholarship benefits comprise a \$200 living allowance and a textbook allowance of \$52, both free of means test, and reimbursement of compulsory school and examination fees up to a maximum of \$150.

Commonwealth Technical Scholarship Scheme: An annual quota of approximately 80 scholarships is available to Tasmanian students to assist them with approved full-time or part-time courses, mainly at certificate or technical level and in approved full-time diploma courses in art, music and agriculture. Benefits for full-time students are the same as for secondary scholarships. Part-time students receive \$100 per annum plus payment of compulsory fees up to \$100.

Commonwealth Post-Graduate Awards: Awards are made annually to enable students to undertake post-graduate studies at an Australian university. In 1970, 38 awards were made available for research studies and 46 in 1971, including one award made for full-time study leading to a master's degree by coursework. Selection is made by each university and the award, subject to annual renewal, may be held for a maximum of: (i) four years in the case of a doctorate degree candidate; (ii) two years in the case of a master's degree scholar; and (iii) for the duration of the course taken (normally one or two years) for coursework awards. Award holders receive a living allowance of \$2,600 per annum and provision is made for assistance with travel, establishment and thesis costs. Married male scholars receive a dependant's allowance for wife and children.

Expenditure: The following table shows Commonwealth expenditure on Scholarship Schemes in Tasmania since 1966-67:

Expenditure: Scholarship Schemes
(£'000)

Type of Scholarship	1966-67	1967-68	1968-69	1969-70	1970-71
University	289	349	411	555	694
Advanced Education	15	19	20	43	49
Technical	12	25	30	33	28
Secondary	184	178	174	180	178
Post-Graduate	58	63	77	97	114
Total	558	634	712	908	1,063

Aboriginal Grants Schemes: The Department of Education and Science administers, on behalf of the office of Aboriginal Affairs, two assistance schemes for students of Aboriginal descent: (i) the Aboriginal Study Grants Scheme; and (ii) the Aboriginal Secondary Grants Scheme.

Aboriginal Study Grants were first awarded in 1969. They assist Aborigines to take study courses after leaving school and provide the full-time student with fees, a living allowance of \$1,100 a year and other allowances. Part-time students receive fees and incidental expenses.

The Aboriginal Secondary Grants Scheme, introduced in 1970, assists students to continue schooling beyond the school leaving age. Benefits cover annual living costs, fees and other allowances.

Students in Commonwealth Scholarship Schemes: The next table shows the number of students holding each type of Commonwealth Scholarship in Tasmania at 30 June:

Number of Students at 30 June: Commonwealth Scholarship Schemes

Particulars	1967	1968	1969	1970	1971
University	503	554	627	788	865
Advanced Education	66	85	106	r 150	174
Technical	62	123	137	r 145	124
Secondary	572	567	544	r 558	559
Post-Graduate	32	32	33	38	46
Aboriginal Secondary .. ..	..	..	..	3	8
Aboriginal Study Grants ..	..	..	..	2	1
Total	1,235	1,361	1,447	1,684	1,777

International Scholarship Schemes

Students come to Australia to study under a variety of schemes, e.g. the Colombo Plan, the Special Commonwealth African Assistance Plan, the Australian International Award Scheme, the South Pacific Aid Programme, SEATO, UNESCO, Commonwealth Co-operation in Education, etc.

In Tasmania the number of sponsored students receiving training in educational institutions has increased rapidly since 1960. Training is arranged, usually on a full-time basis, with the University of Tasmania, the Tasmanian Education Department, non-government schools, government departments, and industry. In addition to long-term sponsored students, short-term visitors have also been brought to the State for periods of up to one year, for specialised experience in educational, industrial, commercial, technical, or scientific fields. From 1965 to June 1971, 294 short-term visitors of this type came to Tasmania.

The Department of Education and Science arranges reception, accommodation, travel and payment of allowances for all sponsored students and also makes arrangements for their training. Professional guidance on academic matters is provided by education officers for all overseas students, both sponsored and private.

Sponsored Training Statistics: The majority of full-time sponsored students, as the next table shows, come to Tasmania under the Colombo Plan:

Number of Full-Time Sponsored Students

Scheme	1966	1967	1968	1969	1970	1971
Colombo Plan ..	104	101	104	79	87	101
Other	4	4	15	23	27	30
Total	108	105	119	102	114	131

Enrolment: In 1971, 114 full-time *sponsored* students were enrolled at the University of Tasmania, fifteen students were studying for the Higher School Certificate and two were at Hobart Teachers College. The most popular bachelor degree courses, for sponsored students in 1971 were: Engineering, 47; Science, eighteen; Agricultural Science, fourteen.

Other Scholarship Schemes

The Department of Education and Science plays a role in the administration of the following scholarship schemes: Queen Elizabeth II Fellowships; ANZAC Fellowships; Australian Agricultural Council Scholarships; Aus-

tralian-American Education Foundation Awards; Confederation of British Industry Scholarships; and various scholarships offered to Australians by overseas governments.

LIBRARY SERVICES

Introduction

State Library of Tasmania

Tasmania's present State Library services and facilities had their origins in a subscription library formed in Hobart in 1849 supplemented by lesser collections of books in mechanics institutes, schools of art and circulating libraries based in various localities.

Development and Financial Difficulty: The subscription library in Barrack Street, Hobart, had 124 members who each subscribed at least one guinea a year for the right to use the facilities. Books were purchased with a £100 'grant-in-aid' made annually by the Legislative Council. The grant was doubled from 1854 to 1860. In 1860 the library was moved to the Hobart Exchange Buildings, opened to the public and was to have received an increased government grant but due to inadequate support from public appeals the proposed £400 grant was substantially reduced. For a period the library struggled against financial difficulties, during which time the public were denied access to facilities, but the Trustees were forced to close down in 1867.

Legislation was introduced three years later under which the Tasmanian Public Library was formed, control resting jointly in the hands of the Government and Hobart City Council. The library was placed in the newly-erected Town Hall and facilities made freely available to the public.

Andrew Carnegie Endowment: By 1890, the Town Hall facilities were overcrowded and inadequate and the Government was asked to provide a new building. Negotiations were still proceeding in 1892 but the prevailing economic conditions precluded government aid at that time. Nothing further was achieved until 1902 when philanthropist Andrew Carnegie was approached for an endowment to build a new library. Carnegie agreed to provide £7,500 and the new library, incorporating a lending service, was opened in 1907; however, sufficient funds to maintain adequate services and facilities were not forthcoming and in consequence both reference and lending services suffered.

Free Library Movement: Tasmania's lack of library facilities led to the formation of the Free Library Movement in 1938. Although mainly campaigning to make the community as a whole more library conscious, the Movement soon became involved in sponsoring plans for free rural library services. Recognising the need for more free libraries the government approved an annual grant of £1,000 to the Free Library Movement to be used to encourage establishment of municipal free libraries. The government also instituted the Rural Libraries Advisory Board, with the power to subsidise free libraries formed by municipal councils. The Board decided to make its subsidies in the form of book collections. By 1943 eleven free libraries had been established under this scheme. Meanwhile, in 1942, the Tasmanian Public Library established its own country reference service offering use of the facility to anyone living more than five miles from Hobart G.P.O.

Investigation and Development of Services: In an effort to overcome difficulties inherent in the existing schemes the government commissioned an investigation, by the Commonwealth National Librarian into library facilities and services. After extensive investigation a plan incorporated in the Binn Report,

1943, which became the basis of the *Libraries Act* 1943, was put forward. It suggested mainly: (i) that the Tasmanian Public Library amalgamate with the Rural Libraries Advisory Board to become the State Library; (ii) that library service should be co-ordinated and improved and should be financed jointly by the Government and municipal authorities; and (iii) that a new library building should be an urgent post-war necessity.

The *Libraries Act* 1943 from which grew the present State library system was designed to provide Tasmania with a library service that would compete with the best available.

Present State Library Services

State Library Services now incorporate three major facilities: (i) the State Reference Library and State Archives in Hobart; (ii) lending library services to adults and children (some of which are regionalised into larger and more efficient groups such as the Hellyer Regional Library system on the North West Coast); and (iii) bookmobile services operating in municipalities in the South East of the State, in the five North West municipalities (Burnie, Penguin, Wynyard, Waratah and Circular Head) and a similar bookmobile operated by the Launceston City Council in suburban and rural areas of St Leonards, Lilydale and Westbury municipalities.

State Reference Library and State Archives: This reference library has a book-stock of more than 135,000 books, magazines and periodicals. The service provides reference facilities and information for people of varied interests and ages, a recent major development being the formation of an information and reference service for companies and industries.

The following table outlines main expenditure over a five year period:

Total Expenditure and Expenditure on Selected Items
(£)

Item	1966-67	1967-68	1968-69	1969-70	1970-71
TOTAL EXPENDITURE					
Expenditure	553,141	617,049	660,418	736,940	896,075
SELECTED ITEMS					
Salaries and Payroll Tax .. .	261,454	310,532	350,715	400,956	482,605
Purchase of Books, etc., Adults	146,680	166,243	153,287	173,601	207,817
Cash Grants to Municipalities ..	31,550	36,655	39,099	44,150	54,522
Lady Clark Library	40,918	27,444	37,578	35,297	49,490
Power, Fuel and Cleaning .. .	22,333	22,557	23,281	25,605	26,044

The State Archives is a repository for all official government records in accordance with the *Archives Act* 1965. Recent acquisitions include the diaries of Sir Elliott Lewis, the 'Philosopher' Smith papers, and the manuscript of J. R. Skemp's *Memoirs of Myrtle Bank*. The special collections house large and unique collections of books, pamphlets, maps and documents relating to Tasmania's history and include: (i) the Wallace Collection; (ii) the Crowther Collection—a large research collection of books, pamphlets, etc., relating to Australia and Tasmania; (iii) the Allport Library and Museum of fine arts—a bequest accepted by the government in 1965, of the late Henry Allport consisting of a collection of antique furniture, china, glass, silver, pictures, prints and rare books.

Lending Libraries: During 1970-71, 883,036 books were borrowed in Hobart and 516,298 from the Launceston City Library system. Borrowings in both centres have tended to remain virtually static since 1968-69, during which year a record four per cent increase in borrowing was experienced.

Lady Clark Children's Library: Since 1952, a complete network of children's libraries has operated throughout the State. This service was established in 1944 as a memorial to Lady Clark, wife of a former Governor, and generally provides the children's books by depositing them in municipal libraries and supplementing this provision where necessary by providing small collections in certain schools.

Library Statistics

The next table illustrates the use of library lending facilities since 1966-67.

**Bookstocks, and Books Films and Records Borrowed
(Number)**

Item	1966-67	1967-68	1968-69	1969-70	1970-71
Bookstocks (a)	591,248	611,041	652,931	660,772	677,276
Books Borrowed—					
Adults	2,011,664	2,038,416	2,146,509	2,163,153	2,259,982
Children	1,064,155	1,150,470	1,170,453	1,206,102	1,239,896
Total	3,075,819	3,188,886	3,316,962	3,369,255	3,499,878
Films Borrowed	15,893	13,312	12,124	12,131	16,839
Records Borrowed	22,545	26,892	29,872	36,915	49,249

(a) As at 31 March to 1968-69; as at 30 June from 1969-70.

Recent Developments

The growth of Tasmanian library services is indicated in the table below by the growth of bookstocks held, firstly by the Tasmanian Public Library (from 1870 to 1942) and by the State Library of Tasmania.

Bookstocks Held by the Tasmanian Public Library and the State Library, Selected Years

1870	1885	1890	1900	1950	1955	1960	1969	1970	1971
5,800	9,575	10,535	11,518	183,062	266,708	272,557	652,931	660,772	677,276

The immense growth of library facilities and services in the relatively short period from 1943 to 1956 pinpointed one vital area of need—adequate housing for the main facilities. A new library building had been promised when the *Libraries Act* 1943 was brought down but it was 1956 before approval was given for construction of Stage I of the new building to replace the one erected with a Carnegie grant in 1904. By May 1962 the new building, the first new library built in Australia since World War II, was completed on the corner of Murray and Bathurst Streets, Hobart. Stage II of the building was started in 1968 and was completed in 1971, as was also a new Regional Library building in Launceston. Construction of these buildings is expected to be followed, in the near future, with construction of a new building in Burnie to house the Hellyer Regional Library.

(A more detailed account of the growth of the State Library appeared in the 1971 *Year Book*.)

The Morris Miller Library (University of Tasmania)

Early History

The University of Tasmania Library was established under the *University of Tasmania Act* 1889 which provided that the University Council '... shall have power to appoint Professors and Lecturers ... and to establish Scholarships, Exhibitions, Prizes and a Library'.

Accorded a low priority by statute, the University Library languished for some years, the first recorded expenditure on books not appearing in the University accounts until 1900, seven years after teaching began. In 1911 the total ordinary expenditure on books was £68 yet the subjects available on the University curriculum that year included English, French, German, Philosophy, Psychology, Ancient and Modern History, Mathematics, Physics, Chemistry, Geology, Law and Engineering.

A special grant and a bequest in 1913 provided £300 for the library and marked the beginning of the growth which has culminated in the present University library collection of 223,000 volumes. By 1915, 6,162 volumes had been accessioned with donations in this early period of the library's growth often exceeding purchased items; in 1921, donations accounted for 770 volumes while 438 were purchased. For twenty years, from 1923 to 1943, expenditure averaged £529 a year. However, the collection continued to grow and by the end of World War II totalled 55,000 books and 11,000 pamphlets, some 12,000 of the books being housed in seven departmental libraries.

The State Government in 1947, provided an extra grant of £15,000 over a five-year period and bookstock growth accelerated. Total stock in 1957 was 117,000 volumes and this had risen to 172,000 volumes in 1967.

Staff

In 1913, Edmund Morris Miller (after whom the library was named in 1966) became honorary librarian in addition to his primary role of lecturer in Philosophy and Economics. For 32 years he was the only trained librarian employed by the University.

The first full-time assistant was engaged in 1919 and employed on shelf-listing. The entire library staff in 1943 consisted of the part-time honorary librarian, an assistant librarian and a cataloguer. Branch libraries, nominally under central control, were supervised by departmental staff. Following World War II there was considerable expansion in all University functions including the library. The first full-time librarian was appointed in 1945 and in 1946-47 a qualified deputy librarian, an additional cataloguer, two junior assistants and a typist were employed.

The library staff has since increased commensurate with the size and responsibilities of the library itself and by 1970, twelve professional librarians were included in the staff of 58.

Administration and Services

The Library is a centralised system responsible for provision of library services to the whole University. Management and administration is vested in a Library Committee of which the Librarian is the executive officer.

Most of the collections (particularly material for the study of social sciences and humanities) and the central administration are housed in the main library building. Branch libraries are located within the relevant faculties of Law,

Engineering, Biomedical and Clinical Medicine and Biology; small collections are maintained in the departments of Geology, Physics, Chemistry and Mathematics.

Library facilities are available to University staff and students and to other authorised persons including Royal Society of Tasmania members, while Clinical Library facilities are available to medical and dental practitioners. In 1970 the library introduced an extension service in Launceston in conjunction with the provision of an extension University service and lectures.

The library has on occasion been associated with various publications in the fields of bibliography and history. Continuing publications include the *Library Handbook* and *Annual Report*; the library is responsible for editing and publishing the *Union List of Higher Degree Theses in Australia University Libraries* which has been issued continuously since 1959.

Accommodation

The University Library was housed until 1954 in the former Hobart High School Building on the Queen's Domain, firstly in one room which was also used as a venue for official and social functions. By 1954, the library occupied one floor and an annexe. Following the move of the University to its present Sandy Bay site collections were established in the science departments.

Work commenced on a new building for the main library in 1959. First occupied in 1961, the five storey building was finally completed and occupied in 1970.

New accommodation was completed in 1968 for the Clinical Library in the Clinical School building at the Royal Hobart Hospital. The Pre-Clinical and Biology Libraries will be merged into a new Biomedical Library in 1973, when new accommodation is planned for completion. The Law Library will also move into a new building in 1973.

Collections

Curiously, the Library has benefited from only a few major gifts, endowments or bequests. Among those it has received are part of the Walker Collection (books on philosophy, theology, history, voyages and literature) and a valuable classics collection formed by the late Professor R. L. Dunbabin. Other recent donations and bequests include 2,000 books on religion from the Archbishop's Library, Hobart, and 850 volumes on medical diseases of the eye bequeathed by the late Dr John Bruce Hamilton of Hobart.

Archives and Rare Book Room

An Archives Section has operated in the library since 1954 to collect and make available for research, business, property and private papers relating to the history and development of the State of Tasmania. The section also maintains a collection of material relating to the University, including the University archives. Rare and valuable volumes are displayed in the library's Rare Book Room. The collections, to which access is restricted, include pre-1900 Australiana and material published overseas before 1800.

Royal Society Library

The Royal Society of Tasmania library of about 35,000 volumes was transferred to the University library in 1970 but remains a separate entity. The Society and University have strong historical links and together the two libraries, which have been built-up in a complementary manner, form a comprehensive resource for studying the natural and physical sciences.

Future Development

Establishment of a library branch in northern Tasmania, as an expansion of the present extension service, will be considered in the future but this is dependent on the expansion of the University's northern facilities.

Initial steps have been taken to provide an audio-visual collection in the central library. Equipment is to be installed for playing disc and taped recordings, particularly music, both from a central control point and individual cassette-players.

Investigations have been made of the feasibility of automating some library routines but introduction of automated techniques is considered a doubtful economic and technical proposition at the present level of transactions.

The following table gives details of major expenditure items, staff, book-stocks and library loans for a five-year period:

University of Tasmania: Expenditure and Selected Statistics

Particulars	1966	1967	1968	1969	1970
GENERAL STATISTICS					
Staff	41	46	48	51	58
Bookstock—Volumes Held ..	162,217	171,791	185,394	204,161	222,771
Current Serial Titles					
Taken	4,033	4,786	5,390	6,189	6,347
Book Loans—External ..	47,384	45,901	65,807	73,848	74,205
Inter-Library—					
Loaned	529	778	1,069	1,336	1,618
Borrowed	1,500	2,023	3,001	3,081	2,751
Seating Capacity—					
Central Library ..	153	223	240	165	630
Branch Libraries	128	151	170	168	171
EXPENDITURE (\$)					
Acquisitions	81,360	108,738	140,163	139,943	166,871
Salaries (a)	84,511	122,681	149,105	168,403	215,898
Binding (b)	12,701	14,582	23,551	19,159	22,787
Other	6,304	4,477	7,660	7,064	9,231
Total	184,876	250,478	320,479	334,569	414,787

(a) Excludes salaries for bindery staff.

(b) Includes salaries for bindery staff.

THE AUSTRALIAN BROADCASTING COMMISSION

Introduction

The Australian Broadcasting Commission came into existence on 17 May 1932, after the passing of the Australian Broadcasting Commission Act and began operations on 1 July 1932 providing a national radio service.

The Commission is a body corporate with perpetual succession and since 1948 has been financed by Parliamentary appropriation. The Commission's annual grant is not directly related to licence fees which are paid into consolidated revenue.

Activities

The ABC has grown into a complex organisation with a staff exceeding 5,800, of which 451 are in Tasmania. There are offices of the ABC in London, New York, Washington, Singapore, Saigon, Tokyo, New Delhi, Kuala Lumpur and Djakarta.

The ABC has a wide range of activities including radio and television broadcasting, news gathering, orchestra and concert management, development of creative and artistic talent, publishing, and overseas broadcasting through the 'Voice of Australia'.

To every listener and viewer, the ABC offers a comprehensive news service, drama of all countries and of all ages, a full sporting service, and a coverage of all important national and international occasions.

History

Beginnings

For a true appreciation of the ABC as it operates today, it is necessary to look back to the early years of broadcasting in this country.

Australia's first broadcasting station, 2SB (operated by Sydney Broadcasters Ltd) began transmission on 23 November 1923.

In the following nine years, broadcasting underwent many changes. Stations operated in 1923 under the 'sealed system', whereby the listener was able to hear only the particular station to which his set was tuned, and his licence fee was paid direct to that station.

When listeners with technical knowledge began adjusting their sets to receive other stations, this system became impracticable. In 1924, stations were graded into 'A' class stations (maintained by licence fees) and 'B' class stations (maintained by advertising). It became apparent that this system favoured the more closely-settled States, notably Victoria. The cost of broadcasting in vast, sparsely populated Queensland and Western Australia was shown to be much higher than in other parts of Australia. As a consequence, the Government decided in 1929 that one organisation (under contract) should provide the programmes for all 'A' class stations, the 'B' class stations continuing to obtain their revenue from advertising.

Australian Broadcasting Company

A contract was given to the Australian Broadcasting Company to provide the national programmes for three years. The Postmaster-General's Department was to operate the transmitters and provide the technical services in the studios. When the three-year term expired the Government did not renew its contract with the Australian Broadcasting Company. It decided instead to hand over the task of national broadcasting to a public body, and to establish a service similar in many ways to that operating in Great Britain.

Australian Broadcasting Commission

The 1932 Act was passed and a five-member Commission was appointed to administer overall policy. The Commission was later increased to seven and in 1967 to nine members. The Australian Broadcasting Commission was entrusted with providing and broadcasting adequate and comprehensive programmes; and it was also to compile and distribute magazines, periodicals, books and pamphlets; to collect news; to form musical groups; to appoint committees to advise it on any matter; and to determine to what extent and in what manner political speeches might be broadcast.

Limitations imposed by the Act were that the Commission could not acquire or dispose of any property exceeding £5,000; or enter into a lease exceeding five years without the Minister's approval. It was not allowed to broadcast advertisements; an annual report and balance sheet was to be supplied for presentation to Parliament; and the Minister retained the right to order or prohibit the broadcast of any matter.

The ABC began operations with eight metropolitan stations and four regionals, with a staff of 265. The PMG's Department continued to provide technical services in the studios until 1964 when the ABC took over this function.

The first metropolitan stations included 7ZL Hobart, which had been on air since 17 December 1924. In the list of achievements given in the ABC's first Report to Parliament, mention is made of a broadcast of the light opera *Maritana* through 7ZL from the Bush Inn at New Norfolk.

The ABC quickly expanded its network and extended its service to rural areas. In Tasmania, regional station 7NT was opened on 3 August 1935, with independent studios in the City of Launceston and a PMG transmitter at Kelso. Station 7ZR Hobart came into operation on 22 June 1938, as the final part of a master plan to establish two metropolitan stations in each State capital. A second Tasmanian regional transmitter, 7QN Queenstown opened on 25 September 1954.

ABC radio programmes are now heard within Australia and the Territories of Papua/New Guinea from 83 stations for an average of eighteen hours each day, and there are twelve transmitters for Radio Australia, the overseas short-wave service which is on air 24 hours per day.

Developments

Important developments in the ABC before and leading up to the introduction of television included the following:

- 1935 The establishment of Schools Broadcasts in all States.
- 1936 The formation of studio orchestras in all States, and the introduction of subscription concerts. The installation of the Bass Strait cable made it possible for the National Broadcasting Service in Tasmania to receive programmes of a high technical quality from other States and from overseas.
- 1941 Formation of The Argonauts' Club, which still exists within the new pattern of radio programmes for children entitled *Young World*.
- 1942 The Joint Parliamentary Committee of Inquiry, having made an exhaustive study of national and commercial radio in Australia, presented its findings which were incorporated into the new *Broadcasting Act 1942*.

The Act acknowledged the Commission's fears of political interference and amended the 1932 legislation to require that any directions received from the Minister in relation to broadcasts were to be reported by the Commission to Parliament.

The new Act also specified that one of the Commissioners was to be a woman; that the ABC's revenue was to be increased by a greater share of the licence fee; and that Advisory Committees were to be set up in each State.

1944 As a means to encourage young Australian artists, the ABC introduced its annual Vocal and Concerto Competitions—now known as Instrumental and Vocal Competitions.

1946 In January, the Sydney Symphony Orchestra was formed on a permanent and full-time basis with the aid of subsidies from the N.S.W. State Government and the Sydney City Council.

This arrangement led to the formation of full-time Symphony Orchestras in other States. The Tasmanian Orchestra was formed in 1948, assisted by grants from the State Government and municipal authorities. The Parliamentary Proceedings Act was passed in 1946, and the ABC began broadcasting proceedings of the Commonwealth Parliament.

1947 From 1 June, the ABC established its own independent News Service.

1948 In December, the Labor Government passed a new Broadcasting Act and established the Australian Broadcasting Control Board to supervise broadcasting and all related matters. The changes affecting the ABC were that the number of Commissioners was increased to seven; and the Commission was to prepare annual estimates of expenditure and to be financed by Parliamentary appropriation.

1953 A Television Act was passed authorising the PMG to make TV stations available for the National Television Service and to issue licences for commercial TV stations. In addition, a Royal Commission was appointed to enquire into the number of TV stations to be established, the areas to be served, and programme standards.

1954 On the recommendation of the Royal Commission and under the authority of the 1953 Act, the ABC was appointed the National Television authority. This was confirmed by the Broadcasting and Television Act of 1956.

Tasmanian Activities

Radio

In radio the ABC presents its own *Tasmanian Breakfast Session* and *Hospital Hour*. Afternoon and evening programmes are hosted to a large extent by members of the Tasmanian announcing staff. Many sporting, talks, and magazine-type programmes also are presented locally, and there are regular broadcasts by Tasmanian musicians, music groups, and the Tasmanian Orchestra.

Television

Introduction: From radio to television was a natural progression for the ABC. It had the knowledge and experience gained from 25 years in radio, and it had on hand musicians, actors, commentators, producers, orchestras, and a world-wide news service, all part of an organisation skilled in the art of entertaining and informing.

The National Television Service began with the opening of ABN₂ in Sydney on 5 November 1956. The Melbourne channel, ABV₂, began two weeks later.

ABT₂, Hobart, came into operation on 4 June 1960; and ABNT₃, Launceston, was opened on 29 July 1963.

The ABNT₃ transmitter on Mt Barrow relays programmes from ABT₂ in Hobart through the PMG's Broadband radio link.

Due to its terrain, Tasmania has numerous areas of difficult reception. These are now covered by the following translator stations:

Australian Broadcasting Commission Translator Stations, January 1972

Location	Channel	Location	Channel
Queenstown-Zeehan	4	Gowrie Park ..	11
Rosebery-Renison Bell	1	Savage River ..	4
Stanley	1	Waratah	2
South Launceston ..	1	Strahan	10
St Marys-Fingal ..	1	Strathgordon ..	5
		King Island ..	11

In addition to fifty transmitters, 36 translator stations carry ABC television programmes to all parts of Australia.

Local Programming: Viewers in Tasmania see the same programmes as seen elsewhere in Australia, plus many which are produced within the State.

As in radio, ABC television programmes are selected to meet and satisfy the wide variety of tastes of the Australian community.

Its public affairs programme, *This Day Tonight* (formerly *Line-Up*) launched on 28 June 1966, was the forerunner of similar programmes in other States which provide a significant public forum where differing opinions can be expressed and discussed and held up to judgement.

Another first for Tasmania was the rural affairs programme, *Landline* which began as an experiment in early 1967. It supplies factual, first-hand information to those concerned with primary industry and practical farming. As was the case with *Line-Up*, the pattern set by *Landline* was quickly followed in other States.

The Hobart produced programme *Scene*, in which 90 per cent of the entertainment is provided by Tasmanian pop groups and singers, caters for teenagers and those in their early twenties. A series called *Makers*, introduced in October 1971, highlights Tasmanian achievements in the field of arts and crafts.

Several short five-minute segments, presented from Channel 2 at 6.55 pm while northern news is being transmitted from Channel 3, have made a big impact—*It's Growing* provides a valuable service for the home gardener and *To Market To Market* is a guide to weekend shopping. Prices are accurate (as the produce shown is bought in Hobart shops) and comments on market trends help the housewife to economise.

From time to time, nationally-known personalities, notably stars of the popular serial *Bellbird*, have been brought to Tasmania for personal appearances; since 1970, the ABC Farm Gadget Contest, conducted in conjunction with the Launceston Show, has created State-wide public interest.

Education: In Tasmania all schools are equipped to take ABC education programmes on radio, and 99 per cent are equipped to make use of television. This is the highest State percentage in Australia. Many of the ABC classroom programmes are produced locally and all are worked out in close liaison with the State Education Department.

Advisory Committees: In Tasmania as in other States, the ABC has the assistance of special Advisory Committees. These voluntary committees make criticisms and suggestions about programmes and specialist activities.

The help they give highlights the principle that the ABC is the trustee for the public in seeking the best use of radio and television in the public interest.

General Programming

A significant part of the ABC's programme output is designed to meet the needs and tastes of all Australians at all levels of cultural and entertainment appreciation, and therefore many programmes deliberately serve only a minority audience.

The Commission's Parliamentary broadcasts provide an important democratic service by giving information on national issues.

The ABC is a major developer of Australian talent. It employs a great number of Australian actors, writers and musicians, and it gives Australian composers the opportunity to bring their works before the public.

Through its annual competitions for young farmers, its Instrumental and Vocal Competitions, and the offer of scholarships to its National Training Orchestra which was established in Sydney in 1967, the ABC provides unrivalled opportunities for young people today.

Radio Australia: These stations now broadcast in eight languages—English, French, Thai, Vietnamese, Mandarin, Cantonese, Japanese and Indonesian.

Radio Australia has won the International Short Wave Club's popularity poll four times since 1950. Since 1951, Radio Australia has provided a weekly programme for Australians serving in Antarctica and in 1962 it introduced a fifteen minute French programme for members of the French Antarctic Expedition in Adeline Land.

Public Concerts

Every year the Commission presents an average of 800 concerts which are attended by almost one million people. It also brings to Australia an annual average of 25 overseas artists, many among the foremost performers in the world.

The full-time symphony orchestras in the States employ a total of almost 500 musicians.

In Tasmania in the year ending 30 June 1971, a total of 58 concerts was presented: 21 major orchestral concerts; 30 free orchestral concerts (25 of which were for school children); and seven recitals.

The Tasmanian Symphony Orchestra is the mainstay of the State's musical life, and in addition to public concerts presents programmes on ABC radio.

Transmission Facilities

All transmitter and relay facilities for ABC programmes are provided and maintained by the Postmaster-General's Department.

Chapter 11

SOCIAL WELFARE AND HEALTH SERVICES

WELFARE

Introduction

In Australia, the principal social welfare benefits are provided by the Federal Government under the *Social Services Act* 1947, as amended, which is administered by the Commonwealth Department of Social Services. Finance for the benefits is provided from the National Welfare Fund which is augmented each year from the Consolidated Revenue Fund by an amount equal to the payments made.

In this chapter, the rates of benefits are specified and the conditions governing them are stated in broad outline.

State social welfare which covers child welfare and relief is administered by the State Department of Social Welfare.

Commonwealth Department of Social Services

Commonwealth activity in social services began with the passage of the Federal *Invalid and Old Age Pensions Act* 1909. This and the *Maternity Allowances Act* were administered by the Department of the Treasury until 1941 when the Department of Social Services commenced to function as a separate organisation. Later, the functions of the Department were widened with the passing of the *Child Endowment Act*, the *Widows' Pensions Act* and the *Unemployment and Sickness Benefits Act*. A referendum held in 1946 empowered the Commonwealth to legislate for the provision of certain social services formerly provided by the States. In 1947, a consolidated *Social Services Act* was passed. The Department also administers the *Aged Persons Homes Act* and the *Sheltered Employment (Assistance) Act* and co-operates with the Commonwealth Department of Health in the administration of the *National Health Act*.

The following table shows expenditure in Tasmania from the National Welfare Fund on benefits under the Federal *Social Services Act*. The most noticeable fluctuations occur in expenditure on unemployment benefits.

Commonwealth Social Welfare Services Payments
(\$'000)

Benefit or Service	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70
Age and Invalid Pensions ..	13,184	13,439	14,574	15,414	16,768	19,517
Widows' Pensions	1,699	1,791	1,983	2,125	2,465	2,927
Aid to Deserted Wives .. ..	..	..	..	..	67	77
Maternity Allowances	251	243	243	254	267	259
Child Endowment (a)	6,306	6,318	6,912	6,612	6,710	7,416
Unemployment Benefits	583	275	228	264	297	360
Sickness Benefits	201	174	190	165	166	199
Special Benefits	52	57	47	42	55	68
Rehabilitation Service	60	54	60	58	76	91
Funeral Benefits	26	33	39	39	42	42
Total	22,363	22,384	24,276	24,973	26,913	30,936

(a) In 1966-67 and 1969-70 five twelve-weekly payments, instead of the usual four, were credited directly to bank accounts.

The next table sets out the social service benefit rates announced in the 1971 Budget and compares them with the previously operating rates.

Commonwealth Social Service Benefits, 1970-71 and 1971-72
(\$ per week)

Benefit	Rate (maximum)		
	1970-71	1971-72	Increase
Age and Invalid Pensions and Sheltered Employment Allowances—			
Single person (a)	16.00	17.25	1.25
Married couple (Both eligible and living together)—each	14.25	15.25	1.00
Married couple (Both eligible but living apart through ill health)—each (a)	16.00	17.25	1.25
Married couple (One eligible) (a)	16.00	17.25	1.25
Wife (if not a pensioner) (b)	7.00	8.00	1.00
First child under 16 years (c)	2.50	4.50	2.00
Second and each subsequent child under 16 years (c)	3.50	4.50	1.00
Guardian's Allowances—			
Where there is a child under 6 years or an invalid child requiring full-time care	6.00	6.00	..
Other cases	4.00	4.00	..
Maternity Allowances—			
No other children	30.00	30.00	..
1 or 2 other children	32.00	32.00	..
3 or more other children	35.00	35.00	..
Multiple Births—			
Additional payment for each additional child	(d)10.00	(d)10.00	..
Child Endowment—			
First child under 16 years	0.50	0.50	..
Second child under 16 years	1.00	1.00	..
Third child under 16 years	1.50	2.00	0.50
Each other child under 16 years	(e)	(e)	0.50
Student child over 16 years and under 21 years	1.50	1.50	..
Widows' Pensions (a)—			
Class A—Widows with dependent children	16.00	17.25	1.25
Mothers' Allowances—			
Where there is a child under 6 years or an invalid child requiring full-time care	6.00	6.00	..
Other cases	4.00	4.00	..
First child under 16 years (e)	2.50	4.50	2.00
Second and each subsequent child under 16 years (e)	3.50	4.50	1.00
Class B—Widows aged 50 years or more (f)	14.25	15.25	1.00
Class C—Widows under 50 years of age in necessitous circumstances (g)	14.25	15.25	1.00
Funeral Benefits (b)	(d)40.00	(d)40.00	..
Unemployment and Short-term Sickness Benefits—			
Adult or married minor	10.00	10.00	..
Spouse	7.00	8.00	1.00
First child under 16 years	2.50	4.50	2.00
Second and each subsequent child under 16 years	3.50	4.50	1.00
Person 16 and under 18 years	4.50	4.50	..
Person 18 and under 21 years	6.00	6.00	..
Long-term Sickness Benefits (i)—			
Adult or married minor	16.00	17.25	1.25
Spouse	7.00	8.00	1.00
First child under 16 years	2.50	4.50	2.00
Second and each subsequent child under 16 years	3.50	4.50	1.00
Person 16 and under 21 years	10.00	11.25	0.75
Rehabilitation Service	(j)	(j)	..
Personal Care Subsidy (k)	5.00	5.00	..

(a) Supplementary assistance at a maximum rate of \$2.00 a week is payable, subject to the payment of rent and to a means test, to single age and invalid pensioners, to a married pensioner whose spouse is not a pensioner, to either or both of a married pensioner

couple who, because of illness or infirmity, cannot live together in a matrimonial home, and to widow pensioners. Supplementary assistance may also be paid to recipients of sheltered employment allowances.

- (b) Wife's allowance is payable, subject to a means test, to a non-pensioner wife if the pensioner is permanently incapacitated for work or is blind or has a child.
- (c) A child is treated for pension purposes as being under sixteen years until he attains 21 years if he is a full-time student and dependent on the pensioner.
- (d) Lump sum payment.
- (e) Child endowment for the fourth and subsequent children under sixteen years in a family increases by 25 cents a week for each child so that the rate payable is \$2.25 a week for the fourth child, \$2.50 for the fifth child and so on.
- (f) Class B Widows' pension may also be payable to certain widows between 45 and 50 years of age.
- (g) Class C Widow's pension is generally payable for not more than 26 weeks immediately after the husband's death.
- (h) A funeral benefit of up to \$40 is payable to an age, invalid or widow pensioner liable for the funeral costs of a spouse, a child or another such pensioner. A benefit of up to \$20 is payable to any person liable for the funeral costs of an age or invalid pensioner. For these benefits, 'pensioner' means a person who would be entitled to a pension if the tapered means test did not apply.
- (i) Long-term sickness benefits are payable to persons who have been in receipt of sickness benefits continuously for six weeks. A supplementary allowance at a maximum rate of \$2 a week is payable subject to the payment of rent and to a means test. Persons in hospital who have no dependents do not qualify for these benefits.
- (j) Disabled persons may be given rehabilitation treatment followed, where necessary, by vocational training. During the period of rehabilitation treatment patients receive the appropriate pension or benefit and while receiving vocational training they are paid a rehabilitation allowance. In addition a training allowance and, where appropriate, a living away from home allowance are also payable free of means test. Free vocational training, with associated allowances, may also be available to Class A and Class B widow pensioners.
- (k) A subsidy of \$5 a week is payable in respect of a person 80 years or more who receives approved personal care and who resides in hostel-type accommodation in an aged persons' home conducted by an eligible organisation under the *Aged Persons Homes Act*.

Pensions and Benefits

In the previous table a description was given of the various pensions, benefits, etc. The rates and conditions are varied from time to time by amending legislation; the existing rates were announced in the Federal Budget of August 1970 and in amending legislation in March 1971 and in the August 1971 Budget. (The Federal Treasurer outlines social service proposals in his budget and these are implemented in later Acts.)

Age and Invalid Pensions

Generally pensions are payable to persons who have been resident in Australia, New Zealand or the United Kingdom for ten years in the case of age pensioners and five years in the case of invalid pensioners. (Reciprocity agreements exist with New Zealand and the United Kingdom.)

The qualifying ages for age pensions are 65 years for men and 60 years for women; invalid pensions are payable to persons over sixteen years of age who are permanently incapacitated for work. Additional allowances are payable for dependants under certain conditions.

For age and invalid pensions, the same means test on income and property operates. 'Means' can consist entirely of income, entirely of property, or any combination of them. The calculation of income excludes the pension itself, income from property, gifts from family, benefits from hospital and

medical insurance schemes, child endowment, etc.; the property component excludes home, furniture, personal effects, the first \$400 of property and \$1,500 of surrender value of life policies, and the capital value of any life interest, annuity or contingent interest, etc. Blind persons, however, may receive the maximum rate of pension free of means test.

The sliding scale operates as follows: half the amount by which assessed means exceed the permissible minima is deducted from the maximum rate pension. Property taken into account in calculating means as assessed is taken at ten per cent to give an annual value. A single pensioner can therefore own property, in addition to exempt property, up to \$5,600 without reduction of pension (ten per cent of [$\$5,600 \text{ less } \400]= $\$520$), and up to \$21,720 before pension ceases (ten per cent of [$\$21,720 \text{ less } \400]= $\$2,132$). With married pensioners, the corresponding lower and upper property limits are \$9,640 and \$38,240.

Free medical service and medicine are provided for pensioners and their dependants, and a concessional telephone rental equal to two-thirds of the amount otherwise payable is available to blind people, pensioners who live alone, and to certain others. Radio and television licences at a reduced rate are also available to these pensioners. Persons who become pensioners for the first time because of the 'tapered' means test, introduced in October 1969, are not eligible for membership of the Pensioner Medical Service or entitled to other subsidiary benefits.

On the death of one of a married pensioner couple, the survivor receives six fortnightly instalments at the old rate before suffering reduction to the single rate.

Pensions are paid fortnightly by cheque posted to the pensioner's address.

Widows' Pensions

These were introduced by the Curtin Government in 1942. They were payable to widows who had been resident in this country, New Zealand or the United Kingdom for five years before claiming a pension. There is no residential qualification where the woman and her husband were living permanently in Australia before he died.

The classes of widows are as follows: (i) a Class A widow has one or more dependent or student children in her care; (ii) a Class B widow is at least 50 years of age, or 45 years when her Class A pension ceases (because she no longer has a child in her care); (iii) a Class C widow is under 50, without children, and in necessitous circumstances in the 26 weeks following her husband's death. The term 'widow' includes a deserted wife, a divorcee and a woman whose husband has been imprisoned for at least six months or is a patient in a mental hospital. Certain 'dependent females' may also qualify for pension.

In 1968, a widows' vocational training scheme was introduced (where participation in the work force was inhibited by the pensioner's lack of skill or training).

The following table shows, for Tasmania, the number and sex of persons receiving age, invalid and widows' pensions, and the amounts paid out in pensions and allowances:

Age, Invalid and Widow Pensioners and Payments

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70
Age and Invalid Pensions—						
Number of Age Pensioners (a)—						
Males	5,799	5,809	5,964	6,178	6,353	7,312
Females	13,093	13,372	13,626	14,233	14,676	16,603
Persons	18,892	19,181	19,590	20,411	21,029	23,915
Number of Invalid Pensioners (a)						
Males	2,055	2,027	2,086	2,065	2,231	2,376
Females	1,477	1,417	1,444	1,483	1,588	1,675
Persons	3,532	3,444	3,530	3,548	3,819	4,051
Amount of Pensions Paid \$'000	13,184	13,439	14,574	15,414	16,768	19,517
Widows' Pensions—						
Number of Pensioners (a)	2,248	2,327	2,432	2,588	2,678	2,958
Amount of Pensions Paid \$'000	1,699	1,791	1,983	2,125	2,465	2,927

(a) At 30 June.

Unemployment, Sickness and Special Benefits

Legislation for these benefits was introduced in 1944 by the Curtin Government and payments began in 1945. The minimum age is sixteen years, the maximum 65 (male) and 60 (female). There are no nationality restrictions, but if a claimant has not been resident in Australia for one year before making the claim, the Department must be satisfied that he intends to live here permanently. Benefits are not payable to people qualified to receive invalid, age, widows' or service pensions, or tuberculosis allowances.

To receive unemployment benefit, a person must be out of work (but not through being a direct participant in a strike), must be capable of undertaking, and willing to undertake, suitable work and have taken reasonable steps to obtain employment. Registration with the Commonwealth Employment Service is necessary; payment is at the discretion of the Department of Social Services.

Sickness benefit may be paid to a person temporarily unable to work because of sickness or accident and who has suffered a loss of income because of this. A married woman is not eligible to receive a sickness benefit if it is reasonably possible for her husband to maintain her. Where the husband is able to maintain her partially a benefit may be paid at a rate considered reasonable in the circumstances.

A special benefit may be granted to a person not qualified for a pension or an unemployment or sickness benefit if, because of age, physical or mental disability, domestic circumstances, or for other valid reasons, he is unable to earn a sufficient livelihood for himself and his dependants. Recipients of special benefits include, among others, persons caring for invalid parents, and persons ineligible for either age, or invalid or widower's pensions because of lack of residence qualifications.

The following table shows, for Tasmania, the unemployment, sickness and special benefits granted, and the expenditure on each (together with weekly averages of those in receipt of each type of benefit):

**Commonwealth Unemployment, Sickness and Special Benefits
Beneficiaries and Payments**

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70
Unemployment Benefits—						
Claims Granted .. no.	5,255	2,742	3,166	3,746	4,110	3,825
Persons on Benefit—						
At 30 June no.	926	433	526	635	600	437
Weekly Average .. no.	1,117	516	433	506	570	541
Benefits Paid \$'000	583	275	228	264	297	360
Sickness Benefits—						
Claims Granted .. no.	2,238	2,040	2,147	1,952	2,119	2,194
Persons on Benefit—						
At 30 June no.	272	298	267	291	242	263
Weekly Average .. no.	287	263	281	259	234	228
Benefits Paid \$'000	201	174	190	165	166	199
Special Benefits—						
Claims Granted .. no.	122	122	160	99	414	429
Persons on Benefit—						
At 30 June no.	120	115	102	87	147	157
Weekly Average .. no.	116	121	104	89	138	145
Benefits Paid \$'000	52	57	47	42	55	68
Total Benefits—						
Claims Granted .. no.	7,615	4,904	5,473	5,797	6,643	6,448
Persons on Benefit—						
At 30 June no.	1,318	846	895	1,013	989	857
Weekly Average .. no.	1,520	900	818	854	942	913
Benefits Paid \$'000	837	506	464	471	518	628

Maternity Allowances

Maternity allowances were introduced by the Fisher Government in 1912. There is no means test and any mother is entitled to a maternity allowance if she gives birth to a child in Australia and if she resides or intends to remain in Australia. It may also be paid in certain other cases, e.g. a birth on a ship proceeding to Australia. Payment is a *single grant* of \$30 where there are no other children; \$32 where there are one or two other children and \$35 where there are three or more children in the mother's care. The amount is increased by \$10 for each additional child in a multiple birth; \$20 of the allowance may be paid four weeks before the birth and the balance soon after.

The following table shows payments made in Tasmania during recent years:

Maternity Allowances

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70
Claims no.	7,821	7,578	7,606	7,939	8,373	8,130
Amount \$'000	251	243	243	254	267	259

Child Endowment

Child endowment was introduced by the Menzies Government in 1941, and is paid to persons or institutions having the care, custody and control of children under sixteen years, or student children under 21. One year's residence

in Australia is required if the mother and child were not born here, but this requirement is waived if the Department is satisfied they intend to remain here permanently.

The following table shows statistics of child endowment in Tasmania:

Child Endowment
Children and Students Endowed, and Payments

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70
Endowed Children and Students						
(a)—						
Children in Endowed Families						
no. 126,526	126,870	127,688	127,849	129,200	129,853	
Children in Approved Institutions no.	521	401	499	432	436	423
Students no.	3,623	3,933	4,015	4,163	4,514	5,254
Total Endowed .. no.	130,670	131,204	132,202	132,444	134,150	135,530
Amount Paid During Year (b)						
\$'000 6,306	6,318	6,912	6,612	6,710	7,416	

(a) Number at 30 June. Children, those under sixteen years; students, sixteen but under 21 years.

(b) In 1966-67 and 1969-70 five twelve-weekly payments, instead of the usual four, were credited directly to bank accounts.

Pensioner Health Benefits and Tuberculosis Allowances

The pensioner medical service and tuberculosis allowances are described later in this chapter under the heading 'Health Services'.

Commonwealth Rehabilitation Service

In 1941, the Curtin Government introduced provisions for the vocational training of invalid pensioners. In 1948, the Chifley Government provided for the rehabilitation of invalid pensioners and of unemployment and sickness benefit recipients. The Menzies Government in 1955 extended eligibility to persons receiving tuberculosis allowances and to children of fourteen and fifteen years who otherwise might qualify for an invalid pension at sixteen. In 1958, widow pensioners and people receiving special benefit were granted eligibility.

The Service aims to fit handicapped people for employment by supplying medical and hospital treatment, surgical aids and appliances and, where necessary, arranging special education and training courses in industry, public service, etc. Vocational counsellors arrange employment with suitable employers and follow up progress.

Rehabilitation training is given if the disability is a substantial handicap to engaging in full employment and if there are reasonable prospects of the person working within three years of starting treatment or training. Disabled people who do not qualify for free service may pay for rehabilitation themselves or may be sponsored by private or government organisations. In Tasmania the Department's rehabilitation centre is located in Hobart.

The following table shows the numbers accepted for rehabilitation and placed in employment in Tasmania:

Operation of Commonwealth Rehabilitation Service

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70
Persons—						
Accepted for Rehabilitation no.	80	100	90	89	100	96
Placed in Employment.. no.	75	86	77	81	90	80
Expenditure (a) \$'000	60	54	60	58	70	79

(a) Excludes capital expenditure on sites and buildings and administrative costs of the Rehabilitation Service.

Training Scheme for Widow Pensioners

In 1968, the Gorton Government introduced a training scheme to provide Class A and Class B widow pensioners with a vocational skill to enable them to undertake gainful employment. Training is limited to one year's duration; it may be either full-time or part-time, and generally it will be provided in business or technical colleges. This has necessitated special classes being organised by arrangement with the Tasmanian Education Department.

During training a widow continues to receive her pension, subject to normal conditions of eligibility, and in addition receives a training allowance of \$8 per fortnight plus fares reimbursement. The Commonwealth pays all tuition fees, and in addition provides essential books and equipment during training up to a maximum of \$80.

The following table gives details of expenditure on the scheme since its introduction and the numbers accepted for training and placed in employment:

Operation of the Commonwealth Training Scheme for Widow Pensioners

Particulars	1968-69	1969-70
Persons—		
Accepted for Training no.	41	41
Placed in Employment no.	2	17
Expenditure \$'000	6	13

Homes for the Aged

Under the *Aged Persons Homes Act 1954*, the Menzies Government provided for subsidies, on a \$ for \$ basis, to approved organisations intending to build or acquire homes for aged persons. In 1957 the cost of land was allowed as part of the capital cost and the Commonwealth contribution was increased to \$2 for \$1. The aim is the provision of conditions approaching ordinary domestic life. ('Homes' in this context does not refer to houses built under the Commonwealth-State Housing Agreement.) Fourteen grants were approved in 1969-70 totalling \$705,497 bringing the number of grants to 97 and expenditure in Tasmania to \$3.66m since the inception of the scheme.

Personal Care Subsidy

A subsidy of \$5 per week is payable to organisations in respect of a person of 80 years or more who receives approved personal care and who resides in hostel-type accommodation in an aged persons' home eligible under the *Aged Persons Homes Act 1954* and for whom National Health Benefit is not received.

Delivered Meals Subsidy

A subsidy at the rate of \$1 for every ten meals provided is payable to approved organisations to establish, maintain, expand and improve 'meals-on-wheels' service. In 1969-70, ten organisations in Tasmania and the meal services they provide were approved. Subsidy payments were \$5,931.

Sheltered Workshops

The Commonwealth *Sheltered Employment (Assistance) Act* 1967 incorporated the *Disabled Persons Act* 1963. The Act's object is to foster and encourage the development of sheltered workshops for disabled people who, on medical grounds qualify, or who may later qualify, as invalid pensioners; to provide such persons with work experience, and the opportunity to earn to the limit of their capabilities for work done, the hope being that some may graduate to normal employment in the future.

Assistance is given by a \$2 for \$1 subsidy towards: (i) the capital cost of erection or addition to workshops; (ii) the accommodation of people engaged in sheltered employment; (iii) the rental for up to three years of premises used to provide sheltered employment; (iv) the cost of workshop equipment; and (v) accommodation hostels for handicapped people engaged in normal employment.

In addition a \$1 for \$1 subsidy is payable towards the cost of salaries of some employees of sheltered workshops and hostels for disabled people engaged in sheltered employment. A training fee of \$500 is payable for each eligible disabled person placed in open employment for not less than twelve months.

During 1969-70, two workshop and eight equipment grants totalling \$84,650 were approved; total expenditure in Tasmania, since inception of the scheme to 30 June 1970, was \$350,317.

Assistance for Handicapped Children

The Commonwealth *Handicapped Children (Assistance) Act* 1970 is designed to assist organisations to provide special training and accommodation facilities for handicapped children with the aim that, in many cases, the children will eventually engage fully in the social and economic life of the community.

Under the Act a \$2 for \$1 subsidy is payable to eligible organisations toward: (i) the capital cost of premises for the training of handicapped children; (ii) the cost of equipment for, or in connection with, such training; and (iii) the capital cost of residential accommodation for handicapped children receiving training.

State Department of Social Welfare*Expenditure*

Activities of this State Government Department are grouped under Child Welfare and Relief. The following table shows expenditure over a five-year period:

Department of Social Welfare: Expenditure
('\$000)

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
Administration and General ..	213	250	303	411	452
Relief Division	157	167	189	259	386
Child Welfare Division ..	178	210	222	300	307
Ashley Home for Boys ..	88	93	105	(a)	(a)
Grants to Organisations ..	94	78	85	109	121
Total	730	798	904	1,079	1,266

(a) Not available; included under Administration and General, and Child Welfare Division.

In 1969-70, the major expenses were: under Relief Division, fuel allowances for eligible pensioners, \$90,000 and relief and maintenance, \$285,000 under Child Welfare Division, maintenance of boarded-out children, \$134,000 and contributions towards maintenance of children in approved institutions, \$97,000; and under Grants to Organisations, Tasmanian Institute for Blind and Deaf, \$96,000.

Relief Division

The functions of this Division are to investigate applications for assistance from needy mothers with dependent children and to give cash relief where necessary; to issue fuel allowances (subject to a means test) to aged and invalid pensioners; and to help pay for funerals, transport, furniture removals and artificial limbs, spectacles, etc. for persons in indigent circumstances. Special grants are made to deserted wives (and sometimes deserted husbands) left with children, wives with husbands in gaol, to certain persons awaiting receipt of Commonwealth benefits or pensions, and to relatives supporting deserted children.

Child Welfare Division

The work of this Division includes the investigation of complaints that children are neglected or inadequately controlled; the supervision of neglected children in their own homes to avert the need for more drastic action; the investigation of cases to appear in Children's Courts; the supervision of children under Court order; the placement and supervision of children made wards of the State; the control of the Department's receiving and other homes; the recovering of maintenance costs, where possible, from parents of children who are a charge on the Department; the licensing and supervision of children's boarding homes and day nurseries; the supervision of child migrants; welfare of children referred by Courts in divorce actions.

Where, because of illness, a mother is unable to undertake her normal duties, accommodation may be provided for her children at Rochembank Hostel in Hobart, or at other suitable residences throughout the State.

Adoption of Children: Women child welfare officers investigate applications by prospective adoptive parents and interview mothers wishing to place their children for adoption. Applications for adoption of children are heard by a magistrate. There were 243 orders for adoption made in 1969-70.

Children's Court Statistics

In February 1970 the regulations dealing with the treatment of child offenders were changed so that police were no longer required to report cases to District Child Welfare Officers for approval of proceedings. Previously child welfare officers sometimes recommended that no further action be taken in particular cases, resulting in more children appearing in police reports than eventually appeared in court.

Children's Courts are established to hear cases involving persons under the age of seventeen years. If proceedings are instituted, a child's parent has the right to be heard and to examine and cross examine witnesses or to be represented by counsel; also a parent can be compelled to attend the hearing if this imposes no unreasonable inconvenience. For the powers of Children's Courts, see the section under 'The Present Law Court System' in chapter 12.

The following table shows the number and age of children who appeared before Children's Courts in 1969-70:

Children Appearing Before Children's Courts (a), 1969-70
Classified by Age and Sex

Sex	Age (in Years)										Total
	Under 8	8	9	10	11	12	13	14	15	16	
Boys	15	7	25	37	57	98	159	229	291	509	1,425
Girls	18	1	3	7	20	11	24	22	38	46	192
Total	33	8	28	44	77	109	183	251	329	555	(b)1,617

(a) A child appearing twice or more before the Courts will appear twice or more in the table.

(b) Includes 54 children (47 boys and seven girls) who were seventeen years old when appearing before the Courts but were sixteen at the time the alleged offences were committed.

Before 1969-70 a child could not be prosecuted without his case having been referred to a welfare officer for investigation. The following table shows for a five-year period, the offences for which children were reported (except for 1969-70, where actual prosecutions are shown). Where a report concerned multiple offences the apparently more serious one has been listed.

Children in Police Reports (a)
Classified by Offence

Offence Alleged	1965-66	1966-67	1967-68	1968-69	1969-70 (b)
Damage to Property	109	97	135	99	86
Breaking, Entering and Stealing	249	224	346	326	338
Stealing	296	343	404	426	397
Receiving	29	18	24	12	19
Illegal Use of Vehicle	75	109	125	59	69
Offences Involving Fraud	8	8	9	14	10
Sex Offences	16	16	21	11	16
Other Offences Against the Person	9	7	24	41	30
Offences Against Decency	10	11	24	32	25
Relatively Serious Offences	801	833	1,112	1,020	990
Disorderly Conduct	51	63	48	32	33
Traffic Offences	105	128	162	185	177
Breaches of—Licensing Laws	176	224	311	331	293
By-Laws	24	26	27	7	27
Firearm Offences	27	31	46	42	36
Other Offences	383	472	594	597	566
Appearing as—Uncontrolled	28	33	19	19	35
Neglected	42	65	89	73	70
Breaches of Supervision	3	10	10	15	10
Complaints under Child Welfare Act	73	108	118	107	115
Total	1,257	1,413	1,824	1,724	1,671

(a) A child reported twice or more will appear twice or more in the table.

(b) Not comparable with previous years; cases no longer referred to welfare officers before prosecution.

In the previous tables, a child may appear more than once if more than one report has been made. The following table shows the number of children found guilty of an offence or against whom a complaint has been proven;

the basis for inclusion is different from that in the two earlier tables: (i) a child found guilty at two or more appearances is only counted once; and (ii) a child found guilty of more than one offence is classified under the more serious.

Individual (a) Children: Findings of Guilty or Complaint Proven, 1969-70

Sex	Relatively Serious Offences (b)	Other Offences (b)	Complaints under Child Welfare Act (b)	Total
Boys	643	387	28	1,058
Girls	80	40	38	158
Total	723	427	66	1,216

(a) See paragraph before table for definition of 'individual'.

(b) See previous table for classification of offences and complaints.

Wards of the State and Supervised Children

Children are made wards of the State either on application of a parent or relative (e.g. in the case of both parents' death or desertion) or by a court order. Children may remain wards until they reach the age of eighteen and in some cases wardship can be extended to the age of twenty-one. Often wards, while under the supervision of a welfare officer, are returned to their home and in such cases wardship is frequently terminated; as it is with those who successfully take up employment.

**Wards of the State: Location, Admissions and Discharges
(Number)**

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
Location at 30 June—					
In Homes—					
Departmental	82	87	112	92	103
Other Children's	190	191	179	196	197
Foster	261	277	282	356	392
With Parents or Relatives	139	137	176	113	132
In Private Lodgings	64	60	54	63	28
Other (a)	35	32	24	27	28
Total	771	784	827	847	880
Children Made Wards During the Year—					
By Courts—Delinquent	43	58	60	69	78
Neglected	33	32	40	43	24
On Parents' or Guardians' Request—					
Neglected (Uncontrolled) (c)	2	1	(b) 9	6	4
Deserted, or Parents Unable to Provide (d)	24	45	(b) 56	65	68
Total	102	136	165	183	174
Children Ceasing to be Wards During the Year—					
Adopted	15	18	20	35	27
Supervision Not Needed, Age, etc.	115	105	102	128	114
Total	130	123	122	163	141

(a) Children in hospitals, other government institutions, missing, etc.

(b) Not strictly comparable with previous year's figure; series revised.

(c) Neglected—unfit for guardianship.

(d) Destitute and/or homeless.

At 30 June 1970 there were 1,242 children under State control or supervision. Three hundred and sixty-two of these children were under legal supervision of child welfare officers as a result of Court imposed supervision orders and 880 children were wards of the State. The above table shows the location of the wards at 30 June and admissions to, and discharges from, wardship during the year.

Wards are placed in: (i) foster homes (mostly ordinary family homes); and (ii) children's homes (private and Departmental). The Department makes payments, based on the child's age, for wards in foster homes and contributes to non-departmental institutions for the maintenance of State wards.

Approved children's homes and foster-homes are assisted with major items of clothing. The Department accepts responsibility for hospital expenses and cost of dentistry for wards of State where this treatment is not available from school dental or hospital services. Optical expenses are also met where necessary. Pocket money, varying from five cents to 50 cents per week, is provided for children in foster-homes. Assistance at a rate of \$2.50 per week also is available in respect of certain non-wards who are orphans or abandoned in the care of the managers of approved children's homes. Contributions are also made to approved children's homes towards the maintenance of children without other means of support admitted at the direct request of other State Government Departments. The maximum rate payable is \$8.25 a week for each child.

The Department's six receiving homes at Hobart, Launceston and Wynyard are conducted by married couples who receive payment according to the foster-home scale for children in residence. They provide a useful service by giving temporary accommodation for children.

The next table shows government expenditure on wards of the State.

**Wards of the State: Government Expenditure
(\$'000)**

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
Expenditure on Departmental Homes ..	182	211	222	227	240
Maintenance of Children—					
In Foster Homes	93	98	103	119	134
In Non-Departmental Homes	61	71	78	95	97
Total Expenditure	337	381	404	441	471

Departmental Homes: State receiving homes which provide temporary accommodation for children are maintained at Hobart, Launceston and Wynyard. Also, in Hobart, a hostel provides accommodation for older boys who have left school and need to be established in employment.

Ashley Home for Boys, Deloraine, provides care and training for older wards who, because of maladjustment or delinquency, require special institutional control.

Wybra Hall, Mangalore, provides care and training for younger wards and boys on remand. Ages range from eight to fifteen years and those admitted have problems of maladjustment or delinquency.

Westwinds, Woodbridge is a home for intellectually and educationally retarded boys who range in age between nine and sixteen. Boys of school age attend the local area school. On completion of schooling, boys in need of further training are trained on the home farm as a preparation for future employment.

Weeroona Girls' Training Centre (Latrobe) provides for those adolescent girls in the care of the Department who require special institutional supervision and training. Girls of school age attend schools in the district and others receive correspondence school education. Older girls are trained in various aspects of domestic work.

Non-Departmental Homes: Other children's homes in which wards are placed are Kennerley Children's Home, Salvation Army Boys' Home, Salvation Army Girls' Home, St Joseph's Child Centre, Bethany Boys' Hostel, Mt St Canice Convent and Hillcrest, all in Hobart; Yalambec Hostel, Glenorchy; Clarendon Home, Kingston; Girls Home, and Northern Tasmanian Home for Boys, Launceston; and Roland Boys' Home, Sheffield.

Community Welfare Services

Marriage Counselling

The two voluntary organisations engaged in marriage counselling in Tasmania are the Tasmanian Marriage Guidance Council and the Catholic Family Welfare Bureau.

Services available include counselling in problems affecting the family and its individual members and relate to: (i) marital difficulties; and (ii) the education of young people to the understanding of married life by way of pre-marital counselling as individuals and through group conferences.

In addition, the Catholic Family Welfare Bureau provides counselling: (i) for behavioural disorders among both adults and adolescents; (ii) for single mothers; and (iii) casework service in adoption and child placement.

The two voluntary organisations maintain a close liaison with the Commonwealth Department of Social Services and the State Department of Social Welfare.

Approved Marriage Guidance Services

Particulars	1969	1970	1971
Marriage Counselling—Cases	483	463	541
Interviews	1,633	1,522	1,717
Pre-marital Counselling—Cases	25	43	28
Interviews	26	82	77
Pre-marriage Conferences—Number	7	7	7
Persons Attending	187	209	180

REPATRIATION SERVICES AND PENSIONS

General

The Repatriation Department was established as a Commission under Federal legislation in 1920. The term 'repatriation' does not adequately describe the Department which is responsible for: (i) the payment of war and service pensions to eligible ex-servicemen and women and their dependants;

(ii) the provision of medical treatment to ex-servicemen and women for injuries and illnesses caused or aggravated by their war service; (iii) the provision of medical treatment to widows and dependants of deceased ex-servicemen whose deaths are due to war service; (iv) the provision of medical treatment in certain circumstances to ex-servicemen and women who are suffering from injuries and illnesses not caused or aggravated by war service; and (v) medical treatment for nurses of the 1914-18 War.

Benefits are provided in respect of service in the 1914-18 and 1939-45 Wars, in the Korea and Malaya operations, with the British Commonwealth Far East Strategic Reserve, and the Special Overseas Forces including ex-servicemen from the Vietnam theatre of operations.

Medical Services

To discharge these functions in Tasmania, the Repatriation Department maintains a branch office, a general hospital and an artificial limb and appliance centre in Hobart. Facilities exist at the Repatriation General Hospital for medical treatment of hospitalised patients and specialist services for out-patients. Generally, treatment for out-patients throughout the State is provided by doctors the Department has appointed as Local Medical Officers. People entitled to treatment can select a doctor from the panel of L.M.Os and receive treatment at Departmental expense. Payment for treatment in hospitals other than the Repatriation General Hospital is met by the Department only in certain circumstances.

Repatriation Pensions—General

War pensions are payable, without general application of a means test, for war-caused or war-aggravated disabilities. *Service* pensions are payable, in the main, to certain ex-servicemen 60 years and over (and ex-servicewomen 55 years and over) subject to a means test; no disability need be claimed.

War Pensions

Eligibility and Rates

War and dependant's pensions may be granted to persons, or to dependents of persons, who come within the following categories and who suffered death or disability: (i) arising from any occurrence before discharge, or overseas war service or on service in Australia within certain areas; (ii) attributable directly to service where the member served only in Australia; (iii) from pulmonary tuberculosis where the member served in any theatre of war; and (iv) from aggravation of a condition existing at enlistment where camp service exceeded six months.

Those who receive war pensions are also eligible for free medical and hospital treatment for their pensionable disabilities. With certain categories of pensioners, the eligibility for free treatment is widened to cover all disabilities. It is also possible for an ex-serviceman to qualify for free treatment for a disability without necessarily being granted a pension. The rates current after the 1970 Federal Budget and legislation in March 1971 are given in the accompanying table which also lists the main Repatriation benefits and the variations made in the 1971-72 Budget.

Repatriation Benefits
(\$ per week)

Benefit	Rate		
	1970-71	1971-72	Increase

PAYABLE WITHOUT MEANS TEST

Special Rate Pensions (a)—			
Member	39.00	42.50	3.50
Wife	4.05	4.05	..
Each Child	1.38	1.38	..
Intermediate Rate Pensions (b)—			
Member	28.50	30.25	1.75
Wife	4.05	4.05	..
Each Child	1.38	1.38	..
General Rate Pensions (c)—			
Member	12.00	12.00	..
Wife	max. 4.05	max. 4.05	..
Each Child	max. 1.38	max. 1.38	..
Special Compensation Allowances (d)—			
Members with 75 per cent to 100 per cent assessed incapacity	4.50 to 6.00	4.50 to 6.00	..
War Widows (e)—			
Pension	16.00	17.25	1.25
Domestic Allowance	8.00	8.00	..
War Orphans' Pensions (f)—			
One parent dead—			
First child	6.00	7.00	1.00
Each other child	5.00	7.00	2.00
Both parents dead—			
Each child	12.00	14.00	2.00
Attendants' Allowances (g)—			
Higher Rate	14.00	16.00	2.00
Lower Rate	8.50	9.50	1.00
Education and Training Allowances (payable under Soldiers' Children Education Scheme) (h)—			
General Education—			
Age 12 up to 14 years—			
Living at home	2.18	2.18	..
Living away from home	7.28	7.28	..
Age 14 up to 16 years—			
Living at home	3.30	3.30	..
Living away from home	7.28	7.28	..
Age 16 up to 18 years or matriculation—			
Living at home	7.28	7.28	..
Living away from home	11.25	11.25	..
Agricultural Education—			
Living away from home	3.65	3.65	..
Industrial Education—			
Living at home	2.65	2.65	..
Living away from home	5.30	5.30	..
Professional Education—			
Living at home	13.46	13.46	..
Living away from home	21.16	21.16	..
Funeral Benefits—			
Towards the funeral expenses of certain classes of deceased ex-servicemen and eligible dependants	50.00 { lump max. { sum	50.00 { lump max. { sum	..
Towards the cost of transportation of the remains of certain ex-servicemen	30.00 { lump max. { sum	30.00 { lump max. { sum	..

Repatriation Benefits—continued
(\$ per week)

Benefit	Rate		
	1970-71	1971-72	Increase
Recreation Transport Allowances (i)—			
Higher Rate	25.00	25.00	..
	a month	a month	
Lower Rate	12.50	12.50	..
	a month	a month	
Allowance for Maintenance of Gift Car (j) ..	300.00	300.00	..
	a year	a year	

MAXIMUM RATES PAYABLE SUBJECT TO MEANS TEST

Service Pensions (k)—			
Member—Single	16.00	17.25	1.25
Married	14.25	15.25	1.00
Addition for—first child	2.50	4.50	2.00
each other child	3.50	4.50	1.00
Wife's Pension (if not a pensioner) (l)—	7.00	8.00	1.00
First child (if no addition to member's pension paid)	2.50	4.50	2.00
Each other child (up to fourth child)	0.25	0.25	..
Guardians' Allowances—			
Where there is a child under six years or an invalid child requiring full-time care ..	6.00	6.00	..
Other cases	4.00	4.00	..

- (a) Special rate pension (commonly referred to as the T.P.I. pension) is granted where an ex-serviceman, because of incapacity accepted as due to war service, is totally and permanently incapacitated—that is, to such an extent as to be precluded from earning other than a negligible percentage of a living wage—or has been blinded as a result of war service. Where an ex-serviceman is only temporarily totally incapacitated, an amount equal to the special rate pension is payable only for the period for which he is so incapacitated. It may also be granted under certain conditions to an ex-serviceman who is suffering from pulmonary tuberculosis.
- (b) Intermediate rate pension is payable where an ex-serviceman, because of the severity of his war-caused disabilities, can work only part-time or intermittently and therefore is unable to earn a living wage.
- (c) General rate pension is payable to an ex-serviceman whose war-caused disabilities do not prevent him from working, although they may reduce his earning capacity. Pension from 10 per cent to 100 per cent of the maximum general rate is payable according to the degree of incapacity as assessed by a Repatriation Board, the Repatriation Commission or an Assessment Appeal Tribunal.
- (d) A 'Special Compensation Allowance' is payable to certain general rate pensioners with assessed incapacity ranging from 75 per cent to 100 per cent.
- (e) Pension is payable to the widow of an ex-serviceman whose death has been accepted as due to his war service or who has died from causes not due to war service but was receiving, at the time of his death, or is later adjudged to have been entitled to receive, the special rate of war pension, one of the rates payable to double amputees or one of the special rates payable in respect of tuberculosis or who served in a theatre of war or who died as a direct result of pulmonary tuberculosis.
- Domestic allowance is also payable to a war widow if she has a dependent child or children under 16 years, or is 50 years of age or over, or is permanently unemployable or has a child 16 years or over who is undertaking education or training approved by the Commission and who, in the opinion of the Commission, is not receiving an adequate living wage.
- (f) War orphans' pensions are paid for the children of an ex-serviceman whose death occurred in circumstances similar to those mentioned in (e) above. The pensions continue until the children attain 16 years.

- (g) An allowance for an attendant is payable to an ex-serviceman: (i) at the higher rate if he has two arms amputated; or been blinded and also afflicted with total loss of speech or total deafness; (ii) at the lower rate if he has two legs and one arm amputated; or has certain double amputations above the knees; or been blinded; or is deemed by the Repatriation Commission to be blinded and in need of an attendant; or, as a consequence of an injury or disease affecting the cerebro-spinal system or an injury or disease similar in effect and severity, is deemed by the Repatriation Commission to be in need of an attendant; provided the disabilities are due to war service.
- (h) Children of ex-servicemen are eligible under the Soldiers' Children Education Scheme where the ex-serviceman: (i) died as a result of war service; (ii) is receiving a special rate pension; (iii) died from causes not due to war service but was receiving, at the time of his death, or is later adjudged to have been entitled to receive, the special rate of war pension, or one of the rates payable to double amputees, or one of the special rates payable in respect of tuberculosis; (iv) is blinded as a result of war service; (v) is suffering from tuberculosis and is receiving a pension equal to the special rate and is likely to remain in receipt of such pension for a period of three years.
- (i) An allowance for recreation transport, at the rates shown, may be payable to certain classes of seriously disabled ex-servicemen, the rate of allowance depending on the degree of loss of locomotion. An allowance for recreation transport is also payable, at the lower rate, to the totally war blinded.
- (j) A motor vehicle may be issued as a gift to certain classes of seriously disabled ex-servicemen and an allowance, at the rate shown, may be payable towards the upkeep of the vehicle.
- (k) Service pension, which is broadly the equivalent of the age and invalid pensions payable to civilians, is payable, subject to a means test, to an ex-serviceman who:
 is suffering from pulmonary tuberculosis; or
 has served in a theatre of war (or in the case of a woman, served abroad or embarked for service abroad) and has attained, if a man, the age of 60 years, or if a woman, 55 years; or is permanently unemployable.

Where a service pension is granted to an ex-serviceman on the grounds that he is permanently unemployable or suffering from pulmonary tuberculosis, or if there is an eligible child, service pension may also be paid to his wife and the first four eligible children, but the amount for a first child is normally paid as an addition to the ex-serviceman's pension.

Where the ex-serviceman's wife is receiving a social service pension, a tuberculosis allowance or a service pension as a 'member of the forces', the rate payable to him is the married rate unless, because of illness or infirmity of either or both of them, they cannot live together in a matrimonial home.

Guardian's allowance may be payable to a service pensioner who is unmarried, widowed, divorced or married but separated and who has the custody, care and control of a child.

Supplementary assistance at a maximum rate of \$2 a week is payable, subject to the payment of rent and a means test:

to a married service pensioner provided his spouse is not receiving a pension from the Department of Social Services, a tuberculosis allowance or a service pension as a 'member of the forces'; or

to a married service pensioner whose spouse is receiving a social service pension, a tuberculosis allowance or a service pension as a 'member of the forces' and who is unable to live with his spouse in a matrimonial home because of the illness or infirmity of either or both of them.

- (l) Wife's service pension is payable, subject to a means test, to a wife who is not in receipt of a pension (other than unemployment, sickness or special benefit) from the Department of Social Services or a service pension as an ex-servicewoman, if the service pensioner is permanently unemployable, suffers from pulmonary tuberculosis or has a child.

War Pension Payments

The following table shows, for Tasmania, the number of pensions in respect of ex-servicemen and their dependants, together with expenditure on war pensions:

War Pensions: Pensioners and Payments

Year	Number of Pensions Current at 30 June				Expenditure During Year (c)
	Incapacitated Ex-Servicemen	Dependants of—		Total (b)	
		Incapacitated Ex-Servicemen	Deceased Ex-Servicemen (a)		
1963-64	8,659	17,366	1,879	27,913	\$'000 6,158
1964-65	8,627	16,506	1,968	27,109	6,214
1965-66	8,623	15,831	1,984	26,446	6,919
1966-67	8,573	15,018	2,031	25,629	6,654
1967-68	8,610	14,324	2,073	25,015	6,790
1968-69	8,644	13,731	2,100	24,485	7,622
1969-70	8,635	13,040	2,123	23,798	7,831

(a) Includes war widows' pensions.

(b) Includes miscellaneous pensions not specified under the 'ex-servicemen' details, e.g. Seamen's War Pensions and Allowances.

(c) Includes widows' allowances.

At 30 June 1970, the proportion of ex-servicemen in Tasmania receiving war pensions in respect of service in the 1914-18 War was 13.7 per cent; the 1939-45 War, 83.4 per cent; the Korea and Malaya operations, 1.4 per cent, and other operations, 1.5 per cent.

Service Pensions

Eligibility and Rates

Service and dependant's pensions may be granted to persons (or to dependants of persons) who come within the following categories and satisfy a means test: (i) men aged 60 or over who served in a theatre of war or women 55 years and over who served abroad; (ii) men and women who are totally unemployable with similar service particulars; (iii) sufferers from pulmonary tuberculosis not qualifying for a war pension on this ground. The conditions governing the means test are the same as for old age pensions described earlier in this chapter.

Service Pension Payments

The following table shows, for Tasmania, the number of service pensions in respect of ex-servicemen and their dependants, and expenditure on pension payments:

Service Pensions: Pensioners and Payments

Year	Number of Pensions Current at 30 June				Expenditure During Year
	Ex-Servicemen	Dependants of—		Total	
		Living Pensioners	Deceased Pensioners		
					\$'000
1964-65	1,737	776	145	2,658	904
1965-66	1,709	827	101	2,637	964
1966-67	1,694	833	111	2,638	935
1967-68	1,689	898	107	2,694	1,014
1968-69	1,712	791	107	2,610	1,093
1969-70	2,039	976	117	3,132	1,404

Soldiers' Children Education Scheme*Eligible Children*

Educational assistance is granted to ex-servicemen's children in particular circumstances: (i) if the parent has died from causes attributed to war service, or was receiving war pension for specific serious disabilities at the time of death; (ii) if the parent, as a result of war service, is blinded, totally and permanently incapacitated or receiving the special rate pension for pulmonary tuberculosis.

Benefits

For children under twelve years, the scheme pays the cost of school requisites and fares. At secondary level, fortnightly maximum payments are: under fourteen years, \$4.35; fourteen but under sixteen, \$6.60; sixteen years and over, \$14.55 if both parents living and \$18.60 if only one parent living. At tertiary level, those living at home may receive \$26.92 per fortnight and those living away from home, \$42.31. For tertiary and professional courses, students may receive grants to pay for test books and equipment, fees and fares. The means test used to determine whether the maximum shall be paid does not relate to the parents' income but takes into account grants the student is receiving from scholarships, cadetships, etc.

HEALTH SERVICES**State Health Services—General***Organisation, Department of Health Services*

The State Department of Health Services is responsible for the maintenance of the health of the community, the prevention of disease and the provision of government hospital and medical services. The Department is under the jurisdiction of the Minister for Health, with the Director-General of Health Services as its permanent head. The headquarters of the Department controls two Divisions, each under a director, namely Public Health and Tuberculosis. Three specialised services are also part of the Department, the State Health Laboratory under the control of the Director of Pathology; the Government Analyst and Chemist Laboratory, under the control of the Government Analyst; and Cardio-Vascular Services, under the control of a Director.

Headquarters*General*

The responsibility of the Headquarters of the Department of Health Services includes: the public hospital management advisory services and the licensing of private hospitals and other medical establishments under the *Hospitals Act 1918*; the District Medical Service; the School Dental Service; the Tourist Nursing Service; legislation concerned with health and allied matters; the Nurses' Registration Board and the Dental Mechanics' Registration Board; some specialist medical services; the State Drug Advisory Committee; liaison with the Health Departments of other States and the Commonwealth (the Director-General is a member of the National Health and Medical Research Council; and the (National) Hospital and Allied Services Advisory Council); and liaison with professional, medical, dental and nursing associations. The Director-General is the controlling authority under the Hospital Employees' Award, the Medical Officers Award and the Nurses' (Public Hospitals) Award. Headquarters also controls and maintains Crown property occupied by the various sections of the Department and deals with the appointment and salaries of staff who are not officers of the Public Service.

Expenditure

Expenditure from Consolidated Revenue for a five-year period is as follows:

**Department of Health Services: Expenditure from Consolidated Revenue
(\$'000)**

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
Administration, Head Office	212	235	252	254	265
Hospital and Medical Services—					
Administration	183	184	213	214	222
Grants to Hospitals	5,842	6,390	6,619	8,087	9,442
Medical Services—Country Districts ..	126	137	149	146	166
District Nursing Service	168	184	189	(a) 22	(a) 1
Dental Health Service	236	330	459	490	504
State Laboratory—Pathology	5	6	4	4	4
National Fitness Section	42	44	54	58	66
Nurses' Registration Board	4	4	5	9	7
Government Analyst and Chemist ..	51	53	65	77	81
St John's Park Hospital	944	1,052	1,191	1,261	1,378
Public Health—					
Administration and Inspectors	148	159	184	213	245
School Health Service	110	115	143	150	161
Child Health Service	134	148	161	173	192
Mothercraft Home	73	78	86	95	106
Road Safety .. ..	..	..	..	..	4
Tuberculosis Division—					
Administration	157	168	174	184	190
Chest Hospitals	295	313	325	210	217
Psychiatric Services—					
Administration	112	111	168	(b)	(b)
Mental Health Hospitals	1,689	1,903	2,167	(b)	(b)
Miscellaneous Grants and Expenses ..	286	(c) 322	(c) 452	(c) 401	440
Total	10,816	11,937	13,058	12,048	13,691

(a) District Nursing Centres administered from 1 July 1968 by Public Hospitals.

(b) Administered by Mental Health Services Commission from 1 July 1968.

(c) Includes Royal Commission on fluoridation of water supplies: 1966-67, \$15,000; 1967-68, \$22,000; 1968-69, \$2,000.

Division of Road Safety

This Division is primarily concerned with development and implementation of government road safety policy and legislation and co-ordinating government and private facilities to achieve increased road safety.

The Division operates a State-wide schools road safety education programme. In addition to school education, the Division is responsible for general road safety publicity and public education and administers activities of the Road Safety Council of Tasmania.

School Dental Health Service

This service, available free to children attending school, aims to examine and treat every child each six months, but continued staff shortages have prevented this from happening. At the end of June 1971, 27 permanent clinics were operating at urban centres throughout the State while 23 mobile units provided services in most country districts.

An orthodontic service is based in Hobart; mobile and permanent clinics give a State-wide therapeutic service.

Dental Nursing: Adopting the New Zealand system, Tasmania became the first Australian State to develop a School of Dental Nursing. Ten first-year and ten second-year State students are being trained, together with ten students on behalf of the Commonwealth Government (these are to be employed in A.C.T. after graduation). Four classes have graduated since January 1968 after two-year courses, and the graduates have been appointed to clinics. The School, with a residential hostel attached providing accommodation for thirty students, is located in Hobart, and in itself treats 90 patients a day. It is expected that a total of approximately 30 dental nurses will work in rural districts; a recognised dental nursing certificate will be needed for a nurse to be appointed to such a field position.

Fluoridation

In 1953 Beaconsfield became the first municipality to add fluoride to its water supply. Fluoridation was extended to the Launceston water supply in 1961; and in 1964 Hobart became the first Australian capital city to add fluoride to its water supply.

A Royal Commission inquired into fluoridation of water supplies in 1968. It reported favourably and recommended its extension throughout the State. The State Government passed the *Fluoridation Act* 1968, setting up a Fluoridation Committee with power to recommend to the Minister for Health the fluoridation of any public water supply and to oversee fluoridation operations. It is required to report annually to the Minister who must lay the report before Parliament.

By July 1971 fluoridation had been extended to the City of Glenorchy, the urban portions of the Clarence and Kingborough Municipalities, the towns of Devonport, Burnie, Bridgewater, Brighton, Kempton, Pontville, New Norfolk (part), Richmond, Sorell-Midway Point, Campania, Cambridge, Kingston, Blackmans Bay and Margate.

District Medical Service

In 1937, the Government undertook to help the more remote municipalities obtain medical services; at present, participating municipalities levy a rate under the *Local Government Act* 1962 as amended, and meet between one-half and one-third of the cost of the scheme.

The scheme provides a general practitioner service free to all residents of the municipality for consultations and home visits. A surgery is usually attached to the district medical officer's house, and branch surgeries are sometimes located elsewhere within the district. Attention out-of-hours is charged for in accordance with a set scale, as are insurance medical examinations, compensation treatment and attention to visitors to the State.

As well as general practice, activities include the dispensing of drugs if no chemist is available; duties as Medical Officer of Health (under the *Public Health Act*) if a municipal council requests it; in some cases, duty as superintendent, if there is a district hospital within the municipality; attention to district nursing hospitals; and post mortem examinations.

Pharmaceutical Services Section

The Pharmaceutical Services Section has numerous advisory, supervisory and regulatory functions under regulations and legislation relating to narcotics, poisons, dangerous and therapeutic drugs.

Alcohol and Drug Dependency Board

This Board was established under the *Alcohol and Drug Dependency Act* 1969; its members are appointed by the Minister for Health from the medical, pharmaceutical, social service, police and legal professions. Its functions are: (i) to keep under review all matters relating to the prevention and treatment of alcohol and drug dependency; (ii) to advise in the declaration and control of substances as drugs under the Act; and (iii) to act as a board of appeal for applications by patients for discharge.

The treatment and rehabilitation of sufferers of alcohol and drug dependency is handled by the Mental Health Services Commission; the Commission's acute psychiatric units at Wynyard, Devonport and Launceston and the Royal Derwent Hospital have been declared treatment centres.

State Drug Advisory Committee

This advises on the nature, strength and variety of drugs to be supplied to public hospitals and institutions by the medical store of the Supply and Tender Department. It is not concerned with administration but helps the store to avoid stocking drugs with different names but similar properties, and stocking drugs not likely to be required.

Nursing

Nursing training is under the control of the Nurses' Registration Board. Of the State's nursing training schools, eight are general, six midwifery, two psychiatric, two child health, one tuberculosis and one geriatric. There are nine general and one psychiatric training schools for auxiliary nurses (nursing aides).

Tourist Nursing Service

This service is based on the fact that trained nursing sisters from outside Tasmania like to visit the State and have a working holiday. These 'tourist nurses' are employed for short periods in hospitals or district nursing centres. Not more than two months' service at any one time is required of a sister in any one place but she may stay longer.

Division of Public Health*General*

The Division of Public Health has responsibility for the preventive medical services of the State. The Director is responsible for the operation of the *Public Health Act* 1962 (as amended) and the control of medical officers of health and other health officers employed by the Department and municipalities throughout the State. A major responsibility is public immunisation programmes, conducted through the municipalities; preparations distributed include the Sabin anti-poliomyelitis vaccine and the Triple Antigen vaccine (against whooping cough, tetanus and diphtheria). The Division is responsible for the Nutrition Advisory Service; industrial hygiene; environmental sanitation; pure food and pure drug quality control; the public health aspects of the building regulations. Other major functions are discussed separately in the following sections.

Child Health Service

Child health nurses attached to child health centres advise mothers on the care and upbringing of their babies and younger children. In 1970 there were 96 centres and thirteen travelling units. Voluntary child health committees working for the centres raise money for furnishings and equipment in buildings erected by the Department. The functions of the centres include examination of babies, maintenance of individual histories, and advice on diets, feeding techniques and hygiene. Phenistix tests are carried out for the detection of phenylketonuria, a rare complaint which results in mental deficiency if not treated in infancy. New-born babies are visited in their homes by the sisters; details of births and addresses are supplied by the hospitals.

The Mothercraft Home: This Home, located in Hobart, provides training for qualified nursing sisters who want to gain child health nursing certificates and for women who want to become mothercraft nurses. It accommodates children under two years who need care or who cannot be looked after at home, and mothers learning to look after children or having feeding problems. When space is available, children under two years can be boarded in the Home for short periods.

School Health Service

This is available free to children under sixteen years at both State and non-government schools. The aim is for an annual inspection at each school by a medical officer, but staff shortages have limited this to examinations at school entry, next at eleven, and finally at fifteen years. Children requiring review or examination for any condition causing concern are also examined by school doctors. Doctors particularly look for conditions likely to affect a child in a school situation. Parents can make appointments for their children to be examined at centres in Hobart, Launceston, Devonport and Burnie.

School nursing sisters visit schools regularly to supervise the health and hygiene of pupils. They maintain medical records, perform cleanliness inspections, test sight and hearing, assist at medical examinations and follow-up defects notified. They contribute to health education, research projects and may organise immunisation sessions at their schools.

Notifiable Diseases

Certain diseases are notifiable under the *Public Health Act*, the aim being to prevent or check their spread. New regulations (November 1967) deleted Scarlet Fever, Rubella and Infantile Diarrhoea from the list and added Serum Hepatitis, Food Poisoning in Two or More Associated Cases, Ornithosis, Salmonella infections and Shigella infections.

Special conditions apply to venereal diseases. Persons suffering from them must not marry until cured, or engage in the manufacture or distribution of foodstuffs, and are liable to arrest and detention if they fail to continue treatment until cured.

Quarantine provisions and tuberculosis are dealt with in later sections.

The following table shows the incidence of infectious diseases in Tasmania for a five-year period:

Notifiable Diseases Reported to Department of Health Services
Number of Cases

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
Amoebiasis .. .. .	..	..	..	..	1
Ankylostomiasis .. .. .	..	1	..	..	..
Bacillic Dysentery	1	5	..	..	..
Brucellosis	1	..	..	2	..
Diphtheria	1	..	..	1	1
Encephalitis .. .. .	..	1	..	..	..
Food Poisoning in Two or More Associated Cases .. .. .	..	..	4	..	..
Gonorrhoea	200	190	209	117	75
Hydatids	7	13	17	8	17
Infantile Diarrhoea and Enteritis	29	24	15	(a)	(a)
Infectious Hepatitis	172	276	569	552	400
Leptospirosis .. .. .	..	..	..	..	3
Malaria	3	6	..	..	2
Meningitis	4	6	1	..	..
Nephritis	12	5	1	..	..
Ornithosis .. .. .	..	..	1	..	..
Poliomyelitis	3	..	..	1	..
Puerperal Fever .. .. .	..	1	..	..	..
Puerperal Pyrexia .. .. .	..	1	..	..	..
Rheumatic Fever	27	27	5	..	..
Rubella	448	219	55	(a)	(a)
Salmonella Infections .. .. .	..	..	1	16	10
Scarlet Fever	1,207	206	39	(a)	(a)
Serum Hepatitis .. .. .	..	..	1	..	..
Shigella Infections .. .. .	..	..	15	27	6
Syphilis	2	7	9	3	7
Tetanus .. .. .	..	..	..	..	1
Tuberculosis	66	61	54	60	48
Typhoid Fever (inc. Paratyphoid) .. .. .	..	3	..	3	1
Total	2,183	1,052	996	790	572

(a) From November 1967 this disease was no longer notifiable.

Health Education

The Health Education Council is composed of representatives of the Division of Public Health, the Education Department, the Mental Health Services Commission, the Adult Education Board and several other interested persons. The Council's aim is public education by distribution of information on health matters.

National Fitness Section

This is concerned with putting into effect the Tasmanian National Fitness Council's policy, which is the promotion of community health and personal fitness; this involves the promotion and extension of physical recreation and amateur sport, fitness and training programmes, co-ordination of youth work, and assistance to existing youth and recreation groups. The main cost is met by the State Government (\$65,515 in 1969-70) and a small grant is made by the Commonwealth Government. Close contact is maintained with local government authorities and community organisations interested in the various aspects of community fitness and recreation. Assistance is given in the development of indoor recreation centres, camping facilities and pro-

grammes, amateur sports, outdoor activities such as canoeing, mountain and bush expeditions and adventure activities generally. Executive services are provided for the Duke of Edinburgh Award Scheme and for the Youth Council of Tasmania.

Mental Health Services Commission

Introduction

Significant advances have been made in the field of clinical psychiatry and in the treatment of mental illness during the past three decades. The development of psychotropic drugs, new therapeutic techniques and improved methods of clinical practice have revolutionised the mental hospital from an institution for the incarceration of lunatics to a modern hospital geared to the care and rehabilitation of the sufferers of psychiatric disorders.

Mental Health Services Commission

The Mental Health Services Commission was established under the *Mental Health Services Act 1967*, following an interdepartmental investigation into psychiatric services in Tasmania. The Commission comprises three members: a Medical Commissioner (who also holds the post of Director of Psychiatric Services), a Clinical Commissioner (being Professor of Psychiatry at the University of Tasmania) and an Administrative Commissioner. Since 1 July 1968, the Commission has operated as a statutory authority, completely separate from the Department of Health Services.

The Commission has continued to concentrate on taking adult and child psychiatry into the community in an attempt to treat the large majority of sufferers of mental illness as close as possible to their own domestic environment: to this end, its consultative facilities are spread on a regional basis and acute psychiatric units have been established at Launceston, Wynyard and Devonport. Each unit is equipped with a full psychiatric team, consisting of a consultant psychiatrist, psychologist and either one or two social workers. These regional units are closely linked to the public hospital complexes and provide a consulting service for other medical disciplines.

The ultimate aim of the Mental Health Services Commission is to provide adequate psychiatric services for all age groups in the community, the principal objective being the reduction of time spent in hospital and the development of community services.

Important links have been established with the Tasmania University Department of Psychiatry and a significant new development in 1970 was the opening of the Professional Psychiatric Clinic at the Royal Hobart Hospital. Occupying two floors, the unit provides both in-patient and out-patient facilities. It is intended that the unit will ultimately become a centre for post-graduate training and research.

A further significant step in the field of preventive psychiatry has been the appointment by the Commission of a Co-ordinator in Community Health Services to co-ordinate the various governmental, professional, voluntary and educational organisations involved in health and social matters in the community.

Royal Derwent Hospital

The following table shows the number of patients who were admitted, discharged or died:

Royal Derwent Hospital
Number of Patients Admitted and Discharged, and Deaths, 1969-70

Particulars	Males	Females	Total
Patients at Beginning of Year	467	463	930
Patients Admitted—			
Admitted, First Time	251	227	478
Re-admitted	245	214	459
Returned from Leave	59	59	118
Total	555	500	1,055
Patients Discharged, etc.—			
Discharged from Hospital	313	304	617
Proceeded on Leave	179	135	314
Died	46	40	86
Total	538	479	1,017
Patients at End of Year	484	484	968

The following table shows the diagnosis of mental illness of patients in the Royal Derwent Hospital:

Royal Derwent Hospital (a)
Diagnosis of Mental Disorder of Patients, 1969-70

Mental Disorder	Patients Admitted (b) 1969-70			Patients at 30 June 1970		
	Males	Females	Total	Males	Females	Total
Senile and Pre-Senile Dementia ..	26	37	63	16	78	94
Alcoholic Psychosis	6	2	8	9	4	13
Psychosis with Intracranial Infection .. .. .	..	..	..	3	1	4
Psychosis with other Cerebral Condition	15	7	22	13	16	29
Psychosis with other Physical Condition	1	5	6	2	..	2
Schizophrenia	74	90	164	135	101	236
Affective Psychoses	35	45	80	15	20	35
Paranoid States	4	2	6	14	12	26
Other Psychoses	1	3	4	..	..	..
Unspecified Psychoses .. .. .	..	..	..	1	..	1
Neuroses	37	73	110	12	6	18
Personality Disorders	50	51	101	19	13	32
Sexual Deviation	3	..	3	..	..	..
Alcoholism	168	36	204	36	7	43
Drug Dependence	8	28	36	3	9	12
Motor Inco-ordination .. .. .	..	1	1	..	1	1
Transient Situational Disturbances	4	4	8	..	..	..
Behaviour Disorders of Childhood	5	5	10	7	1	8
Mental Disorder not Specified as Psychotic Associated with Physical Conditions	4	8	12	11	6	17
Mental Retardation—Borderline	3	5	8	5	11	16
Mild	19	16	35	27	26	53
Moderate	9	12	21	62	54	116
Severe	8	6	14	54	74	128
Profound	4	2	6	25	33	58
Unspecified	4	..	4	19	5	24
Other	8	3	11	2	..	2
Total	496	441	937	484	484	968

(a) Includes Millbrook Rise Hospital.

(b) Excludes those returned from leave.

Other Institutions

Hobart: Clare House Day Hospital was established in 1964 for the assessment and treatment of alcoholics. Its role has since been broadened to encompass a wide range of psychiatric disorders. Attendance rates have increased yearly: in 1969-70, 352 new patients sought treatment, while 2,911 out-patient and 3,084 day patient visits were made.

The Combined Children's Centre was opened in February 1968 for the treatment of psychiatrically disturbed children referred to the Centre by private medical practitioners, the Royal Hobart Hospital, Social Welfare Department, School Medical Service and the Guidance Branch of the Education Department. At 30 June 1970, there were 417 children under treatment.

The Day Minding Centre was opened in September 1968 to care for severely mentally retarded children, many of whom are also physically retarded. At 30 June 1970, 30 children were enrolled at the Centre.

Launceston: The Lindsay Miller Clinic at the Launceston General Hospital reported the following attendance figures during 1969-70: out-patient visits, 4,056; day patient visits, 574; in-patients, 478. During 1970, a Mental Health Workshop was set up to help handle juvenile delinquency problems.

North-West: In-patient facilities are provided at the Mersey General Hospital and the Spencer Division of the North-Western General Hospital.

Various centres provide facilities for out-patient treatment on the North-West coast. During 1969-70, the North-Western General Hospital, Spencer Division treated 526 out-patients; Burnie Division, 1,243; Smithton District Hospital, 193; Devonport and Ulverstone Clinics, 1,756.

Division of Tuberculosis

The Division is concerned with diagnosis, treatment and after-care. Under an arrangement with the Commonwealth, the Tasmanian Government conducts a campaign against T.B. The State is reimbursed by the Commonwealth Government for approved capital and maintenance expenditure in carrying out the physical work of the campaign.

An allowance is paid by the Commonwealth Department of Social Services to T.B. sufferers to encourage them to give up work, to minimise the spread of the disease, and to promote better treatment. The allowance is subject to a means test on income (but not on property) and provides \$15.50 a week for a single person in hospital and \$18.75 weekly while at home; married sufferers at home or in hospital are paid \$30.75 per week plus \$2.50 for the first dependent child and \$3.50 for each subsequent child.

Tubercular patients are treated at the Tasmanian Chest Hospital (New Town). The X-ray campaign has led to a reduction in demand for in-patient treatment and to generally shorter periods in hospital.

The following table shows the confirmed diagnosis of tuberculosis cases notified in Tasmania over a five-year period.

**New Cases Notified to Tuberculosis Division
Classification by Diagnosis and by Sex**

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
Pulmonary Males	34	36	31	37	25
Females	23	13	12	12	12
Tuberculosis Pleural Effusion .. Males	..	..	1	..	2
Females	1	..	..	..	..
Tuberculosis Meningitis Males	..	..	..	..	..
Females	..	..	..	..	1
Primary Tuberculosis Males	..	1	..	..	..
Females	..	1	..	..	..
Non-Pulmonary Cases Males	1	3	2	5	3
Females	7	4	2	3	3
All New Cases Males	35	40	34	42	30
Females	31	18	14	15	16
Persons	66	58	48	57	46

State Controlled Hospitals

General

In Tasmania, there are private hospitals and also hospitals for which the State Government accepts the major financial responsibility; in the case of the latter group, control is either direct or exercised through hospital boards.

Institutions controlled by the State include four general hospitals, fourteen district hospitals, thirteen district nursing hospitals with bed accommodation, one mental hospital, two maternity hospitals, one chest hospital and three hospitals for the aged. (The Department of Health Services directly administers the chest hospital and one hospital for the aged.) These institutions could all legitimately be described as 'public'. However, in the tables in this section, the term 'public' is applied only to the general and district hospitals, the other types of institution being specified separately.

General Hospitals (Public)

Hospitals providing all facilities and specialised treatment are the Royal Hobart, Launceston General, Mersey General (at Latrobe) and North Western General (with divisions at Burnie and Wynyard). The Queen Alexandra (Hobart) and the Queen Victoria (Launceston) are maternity hospitals.

Specialist treatment is available at general hospitals in obstetrics, gynaecology, orthopaedics, urogenital surgery, plastic and reconstructural surgery, neuro-surgery and neurology, radiology, pathology, radiotherapy, psychiatry and ophthalmology; skin diseases and venereal diseases are also treated and clinics operate in thoracic medicine and surgery. An emergency obstetrical service, with specialists based in Hobart and Launceston, provides a free service to the smaller public hospitals, district nursing hospitals and district medical officers outside the two cities.

The Lady Clark Hospital, an annexe of the Royal Hobart Hospital, is a rehabilitation and physiotherapy centre with both in-patient and out-patient facilities.

The Peacock Convalescent Hospital in Hobart is run by a committee of management, most of its patients being referred from the Royal Hobart Hospital.

All district nursing hospitals, formerly administered by the Health Department, have been administered as annexes by various general or district hospitals since 1 July 1968, the parent hospital in each case being selected on a geographical basis.

Fees

The daily general ward fees charged in the State-controlled hospitals are not much lower than those charged in multiple bed wards in private hospitals. However, the former fees are all-inclusive (i.e. covering medical attendance, surgery, although additional charges may be made for radiology, pathology and electroencephalography) while the latter cover only accommodation and general nursing. Under the 'personal patient' scheme, a patient in the Hobart and Launceston general hospitals may have his own doctor, if he is an honorary doctor at the hospital, for the payment of an additional fee. Voluntary insurance with hospital fund organisations and Commonwealth hospital benefits enable most patients to meet the fees charged.

Hospitals for the Aged and Invalids

The State Government administers three hospitals caring for the aged and for invalids. In the table that follows, the average daily number of inmates is dissected between 'general' and 'hospital'; 'general' refers to inmates who are not receiving treatment in the hospital sections of the hospitals.

Government Hospitals for the Aged, 1969-70

Institution	Average Daily Number of Inmates			Beds Available		
	For General Care	For Hospital Treatment	Total	For General Care	For Hospital Treatment	Total
Cosgrove Park (a)	105	134	239	141	134	275
St John's Park ..	137	295	432	240	309	549
Spencer (b) ..	6	25	31	10	25	35
Total ..	248	454	702	391	468	859

(a) Cosgrove Park is administered as part of the Launceston General Hospital.

(b) This is a geriatric wing of the Wynyard Division of the North-Western General Hospital (previously the Spencer Hospital).

It is planned to develop St John's Park (the southern State geriatric hospital) into a comprehensive complex of services, including in-patient services, in addition to geriatric patients, for children and adults requiring hospitalisation because of all forms of disablement e.g. spastic diseases, mental retardation, crippled children and other handicapped persons and disabled persons generally. Domiciliary and day hospital therapeutic and home help facilities will be based on this general 'rehabilitation' complex.

The co-ordination of services will be compatible with the most economic and effective use of skilled, especially qualified paramedical staff.

District Hospitals (Public)

These do not provide the diverse range of services available in the general hospitals, and do not have resident medical officers. They are located at Beaconsfield, Campbell Town, Currie, Franklin, Longford, New Norfolk, Ouse, Queenstown, Rosebery, Scottsdale, Smithton, St Marys, Ulverstone, and Whitemark.

Finances of State Controlled Hospitals

The following table gives a financial summary of the operation of State controlled hospitals and hospitals for the aged ('public' hospitals in the table include general and district hospitals):

State Controlled Hospitals and Hospitals for the Aged
Receipts and Payments (a) 1969-70
(\$'000)

Particulars	Hospitals (excluding Mental)				Mental Hospital	Hospitals for the Aged
	Public (b)	Chest	Maternity (c)	Total		
Receipts—						
Government Aid—						
State	8,629	..	507	9,137	2,184	1,012
Commonwealth..	963	218	7	1,187	31	562
In-Patient Fees ..	2,927	..	428	3,355	176	333
Out-Patient Fees..	338	..	..	338	..	..
Other	27	..	1	28	133	13
Total	12,884	218	943	14,045	2,524	1,920
Payments—						
Salaries and Wages	8,762	176	673	9,611	1,829	1,432
Provisions	682	(d)	70	(d)	(d)	175
Domestic Supplies	923	(d)	112	(d)	(d)	180
Dispensary, etc. ..	1,390	(d)	33	(d)	(d)	39
Other	924	42	59	4,235	696	94
Total	12,681	218	947	13,846	2,524	1,920

(a) Excludes expenditure from State Loan Fund.

(b) Includes maternity wards in public hospitals.

(c) Excludes maternity wards in public hospitals.

(d) Not available on a comparable basis; included in 'Other'.

Staff and Patients in State Controlled Hospitals

The following table gives a summary of the main statistics relating to staff and patients in State controlled hospitals and hospitals for the aged.

State Controlled Hospitals and Hospitals for the Aged
Staff, Accommodation and In-Patients

Particulars	Hospitals (excluding Mental)		Mental Hospital		Hospitals for the Aged	
	1968-69	1969-70	1968-69	1969-70	1968-69	1969-70
Hospitals and Homes .. no.	22	22	1	1	3	3
Nursing Staff—						
Males	45	44	157	173	109	103
Females	1,893	1,981	164	171	160	183
Beds Available (Patients).. no.	2,215	2,224	1,030	1,030	858	839
In-Patients—						
Total Number Treated						
Males	18,510	19,090	1,008	1,022	586	576
Females	27,693	27,802	1,027	963	473	479
Daily Average Number of Patients During Year						
Males	573	580	448	485	371	371
Females	809	820	462	457	348	345
Persons	1,382	1,400	910	943	719	716
In-Patient Costs—						
Total \$'000	11,067	12,067	2,300	2,524	1,793	1,920
Daily Average Per Patient \$	21.94	23.62	6.92	7.34	6.83	7.35

Private Hospitals

These are operated by church and other private organisations. They are licensed to receive surgical, medical, maternity or psychiatric cases. Of the seven medical-surgical private hospitals, Calvary and St John's (Hobart) and St Luke's and St Vincent's (Launceston) are the largest.

Nursing homes, operated by private bodies, are institutions which do not conform to private hospital specifications with regard to equipment, construction and staffing, as laid down under the *Hospitals Act*. They are licensed to treat general cases within limits as specified in the licence. Rest homes are licensed usually to admit old people who require minimal medical care. At 30 June 1971, there were 40 private institutions concerned with aged people who were ambulant, convalescent, or suffering from geriatric illnesses. Nazareth House (St Leonards), St Ann's Rest Home (Hobart), Meercroft Home (Devonport) and Freemason's Homes of Southern Tasmania (Lindisfarne) are the biggest of these, nineteen of which have accommodation for 20 or more patients. Two other private hospitals cater for incurable or chronic illnesses, two for general convalescence and two for retarded children.

State Health Laboratory

The State Health Laboratory is under the control of the Director of Pathology. Apart from providing certain pathological services to the Royal Hobart Hospital, other hospitals and to doctors, the laboratory provides special bacteriological and cytological services.

The Laboratory is located at the Royal Hobart Hospital; prior to 1965 special tests had to be done in Melbourne, but equipment installed in that year now enables all work to be done in Tasmania. Magnifications of 100,000 diameters can be gained with the electron microscope and this is particularly useful in medical teaching and in diagnosis. Specimens from suspected T.B. sufferers, discovered in the compulsory chest X-ray programme, are examined and uterine and other cancers can be discovered by the Papanicolaou smear test. Tasmania was the first Australian State to introduce this test on a large scale; early diagnosis by this simple and effective method, particularly in women who show no symptoms, usually makes possible the cure of this type of cancer. Mass screening of new-born babies is done to correct errors of inborn metabolism, especially phenylketonuria. Other work includes analysis of food, water and milk samples.

Government Analyst and Chemist Laboratory

This laboratory analyses a wide variety of foods, drugs and other substances and undertakes work for government departments and the public. Its work includes food and agricultural chemistry, forensic chemistry and toxicology, analyses for industrial hygiene purposes, water and corrosion problems, and other matters such as blood alcohol examinations for Road Safety (Alcohol and Drugs) Act purposes.

Other Health Matters

Child Health Institutions

These are medical institutions run by the State or subsidised by public funds. They provide treatment and supervision along with general education. The Sight Saving School, School for the Deaf, School for the Blind, Talire (for retarded children) and Wingfield (for orthopaedic patients) are government institutions for children with particular defects.

Ambulance Services

The Ambulance Commission of Tasmania co-ordinates services throughout the State and is responsible to the Minister for seeing they operate effectively. Ambulance Boards, centred on Hobart, Launceston, Devonport and Burnie, control services in the adjacent municipalities. A few municipalities, however, operate services outside the *Ambulance Act*. The total Government grant to ambulance services, both under Board and independent control, was \$147,000 in 1970-71.

Ambulance services under control of the four Boards provide free transport for ratepayers, occupiers and pensioners. In addition to receiving Government subsidies, their income is derived from fees (payable by visitors) and municipal grants.

The Ambulance Commission has adopted the training standards of the Victorian Ambulance Officer's Training School.

Royal Flying Doctor Service

This was established in Tasmania in 1960 and has as its purpose the provision of medical and dental services to persons in isolated areas. If the illness or injury is serious, a doctor flies to the patient and if necessary brings him back to a hospital. The ambulance services receive the calls, make arrangements to charter aircraft and supply medical equipment. The Commonwealth and State Governments make an annual grant towards operational expenses.

Blood Transfusion Service

Prior to 1954, the Australian Red Cross Society, which operates the Service, was assisted only by the State Government; since then, a grant equal to 30 per cent of operating expenses has been made by the Commonwealth Government and 60 per cent by the State. The combined grant in 1970-71 was \$75,000.

Municipal Health Functions

Municipal councils and city corporations possess wide powers and responsibilities in public health. They organise triple antigen immunisation campaigns against diphtheria, whooping cough and tetanus, and vaccinations against poliomyelitis and smallpox. (These are available without charge to children under 17 years.) They control the condemnation of sub-standard dwellings, the effective disposal of sewerage and drainage, the provision of garbage and night soil services, the construction of reservoirs and the reticulation of water. A Medical Officer of Health, often appointed by two councils, is responsible, among other things, for enquiring into the causes, origins and distribution of diseases; for investigating influences affecting the public health of the district; for directing and supervising the municipal health inspectors in the execution of the *Public Health Act*; for inspection of local certificates of notification of infectious disease and direction of control of such disease; for reporting the existence of any nuisance and inspection of any animal carcass, provisions of food for sale for human consumption; and for inspecting any premises where milk or milk products are produced or stored and for reporting on health of inmates or animals on the premises.

Commonwealth Department of Health*General*

The Department is concerned in Tasmania with the maintenance of a quarantine service involving supervision of persons, animals, plants and goods from overseas; the provision of hospital, nursing home, handicapped children's, medical and pharmaceutical benefits; the payment of grants for free milk to

school children; the pensioner medical service; tuberculosis allowances; home nursing, mental institution and other subsidies; the control and maintenance of health laboratories at Hobart and Launceston; the Acoustic Laboratories in Hobart and Launceston; co-operation with the State Department of Health Services, in planning and taking measures to improve public health, including the anti-tuberculosis and anti-poliomyelitis campaigns, and National Fitness; the conduct of certain medical examinations; and the supervision of the medical aspects of radio and television advertising and talks on medical matters.

Commonwealth National Health Payments

The following table shows the total Commonwealth payments for health benefits and services in Tasmania:

Commonwealth National Health Payments (a)
(£'000)

Benefit or Service	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70
Hospital Benefits	1,147	1,235	1,289	1,518	1,590	1,787
Nursing Home Benefits	664	756	761	800	1,010	1,393
Medical Benefits—						
General	1,000	1,140	1,195	1,443	1,609	1,725
For Pensioners	256	386	406	460	491	580
Pharmaceutical Benefits—						
General	1,287	1,379	1,526	1,438	1,722	1,870
For Pensioners	578	637	802	850	1,030	1,125
Payments to Hospitals	414	713	538	602	706	739
Handicapped Children's Benefit (b)	..	..	..	..	5	16
Tuberculosis Campaign (c) ..	437	422	404	401	428	402
Free Milk Scheme	380	398	442	503	421	466
Miscellaneous	66	82	104	101	112	119
Total	6,229	7,148	7,467	8,116	9,124	10,222

(a) Payments from National Welfare Fund and minor items of expenditure from Consolidated Revenue Fund.

(b) Introduced from 1 January 1969.

(c) Includes allowances to persons and reimbursements to State Government for approved expenditure.

Pensioner Medical Service

Free general practitioner medical treatment is available for most age, invalid, widow and service pensioners and their dependants (the exclusion relates to those admitted to pension by liberalisation of the means test in April 1967). Entitlement cards for these benefits are issued by the Social Services Department (or by the Repatriation Department in respect of service pensioners). Eligible pensioners are treated free in out-patients departments and in standard wards of public hospitals.

Commonwealth Acoustic Laboratory

The main function of the Laboratory is the provision and maintenance of hearing aids, without charge, to deaf school and pre-school children, and to those whose hearing loss was discovered after leaving school, but who are still under 21 years of age. It also provides and maintains hearing aids on behalf of the Repatriation and other Commonwealth departments and assists the Education Department in measuring deafness by providing and maintaining portable audiometers. A 1967 amendment to the Federal *National Health Act* provided that the laboratory could supply eligible pensioners with hearing aids on hire (for a single payment of \$10) and give the necessary technical services for fitting, re-adjusting, maintaining, etc.

Commonwealth Health Laboratories

These laboratories, situated in Hobart and Launceston, provide free diagnostic services for medical practitioners and hospitals. Included in the services available are haematology, histopathology, serology, biochemistry, bacteriology and diagnostic cytology. The laboratories also undertake blood typing and cross-matching services for the Red Cross Blood Transfusion Centres.

Quarantine

Quarantine is administered by the Commonwealth and guards against the importation *from overseas* of human, animal and plant infection. The administration of safeguards against infection from *interstate travel and trade* is left to the States unless Commonwealth action is necessary for the protection of a State.

Under Commonwealth-State arrangements, the Commonwealth Government has arranged to reimburse State Marine Boards the cost of installing incinerators at first ports of entry for overseas ships. The incinerators are used to dispose of overseas ships' garbage, reducing the possibility of introduction of diseases. Incinerators have been installed or are shortly to be installed in all Tasmanian first ports of call.

National Health Benefits

General: A basic principle in the provision of medical and hospital benefits is Commonwealth support for voluntary insurance against the costs involved. Registered health insurance organisations collect contributions from members and refund all, or a proportion, of hospital charges depending on what rate of benefit the patient has insured. The organisations refund a proportion of doctors' charges. In addition, the organisations act as paying agents for the Commonwealth component of the medical and hospital benefits; non-contributors to organisations receive from the Commonwealth a reduced rate of hospital benefit and no medical benefit. Dual membership of either registered medical or hospital benefits organisations is not permitted.

A Special Account system provides an assured rate of benefit to contributors who would otherwise have been excluded because of organisations' rules relating to pre-existing ailments, chronic illnesses and maximum organisation benefits; payments made by organisations under this provision are reimbursed by the Commonwealth.

Medical Benefits: In 1970, important amendments to the *National Health Act 1953-69* introduced a new national medical benefits scheme based on the principle of a 'most common fee'. A list of fees representing those most commonly charged by doctors in each State was compiled, following a survey undertaken before finalising the new medical benefits scheme. From 1 July 1970, contributors to a registered medical benefits fund, whose doctor charges the 'most common fee', pay no more than \$5 for any medical service, ranging from 80c for a surgery visit to \$5 for a complicated surgical operation. The balance of the cost is then shared between the health fund and the Commonwealth Government. The old multi-table scheme has been replaced by a single table with contribution rates varying from State to State; in Tasmania most organisations have a weekly family rate of 55c and a single rate of 28c.

Hospital Benefits: These benefits are paid for all patients by the Commonwealth at a minimum rate of \$0.80 a day but if a person contributes to a medical benefits organisation the Commonwealth benefit increases to \$2. The highest combined organisation and Commonwealth benefit in Tasmania is \$30.00 a day and the highest family rate of contribution is \$2.20 a week.

Subsidised Medical and Hospital Services: The Commonwealth also provides special financial assistance in the following cases:

- (a) Low income benefit: (i) a family with an income of \$46.50 (gross) or less: free medical benefits and public ward hospital cover; (ii) gross family income above \$46.50, but not exceeding \$49.50: medical benefits and public ward hospital cover for one-third of the normal health insurance contribution; (iii) gross family income above \$49.50, but not exceeding \$52.50: benefits as above, but for two-thirds of the normal health insurance contribution.
- (b) Persons receiving unemployment, sickness or special benefits under the *Social Services Act*: full medical benefits and public ward hospital cover.
- (c) Migrants: full medical benefits and public ward hospital cover during the first two months in Australia, providing the migrant has joined a medical benefits fund.

Nursing Home Benefits: The Commonwealth pays a benefit of \$3.50 per day direct to the homes for each qualified patient and a further \$5-\$6.50 a day for patients classified as requiring intensive care. Nursing Homes are required to deduct the Commonwealth payment from patients' accounts. The institutions need to be approved as nursing homes under the *National Health Act*. Patients do not have to be insured with a hospital benefits organisation and there is no time limit on the payment of benefits.

Handicapped Children's Benefit: A benefit of \$1.50 per day is paid for each handicapped child (to sixteen years) in approved institutions.

Hospital and Medical Benefit Payments: Commonwealth hospital benefit payments are made on a hospital bed-day basis as follows: insured patients, \$2; uninsured, 80c; pensioner patients, \$5; and nursing home patients, \$3.50. The following tables show payments by the Commonwealth, and also by the health insurance organisations (referred to as 'Fund Benefits') in Tasmania, together with details of the number of such organisations and their membership.

Hospital Insurance: Members and Benefits

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
Registered Organisations(a) no.	10	9	9	9	9
Members (a) '000	120	114	118	115	118
Hospital Benefits Paid—					
Commonwealth Benefits—	\$'000	\$'000	\$'000	\$'000	\$'000
Insured Patients (b) ..	670	670	688	709	710
Uninsured Patients (c) ..	50	46	47	45	46
Pensioner Patients (c) ..	515	572	783	836	984
Subsidised Medical Services Patients					47
Nursing Home Patients (c)	756	761	800	1,010	1,393
Total	1,991	2,050	2,318	2,600	3,180
Fund Benefits (d)	2,087	2,290	2,925	3,228	3,310

(a) At end of year.

(b) Includes Special Account deficits.

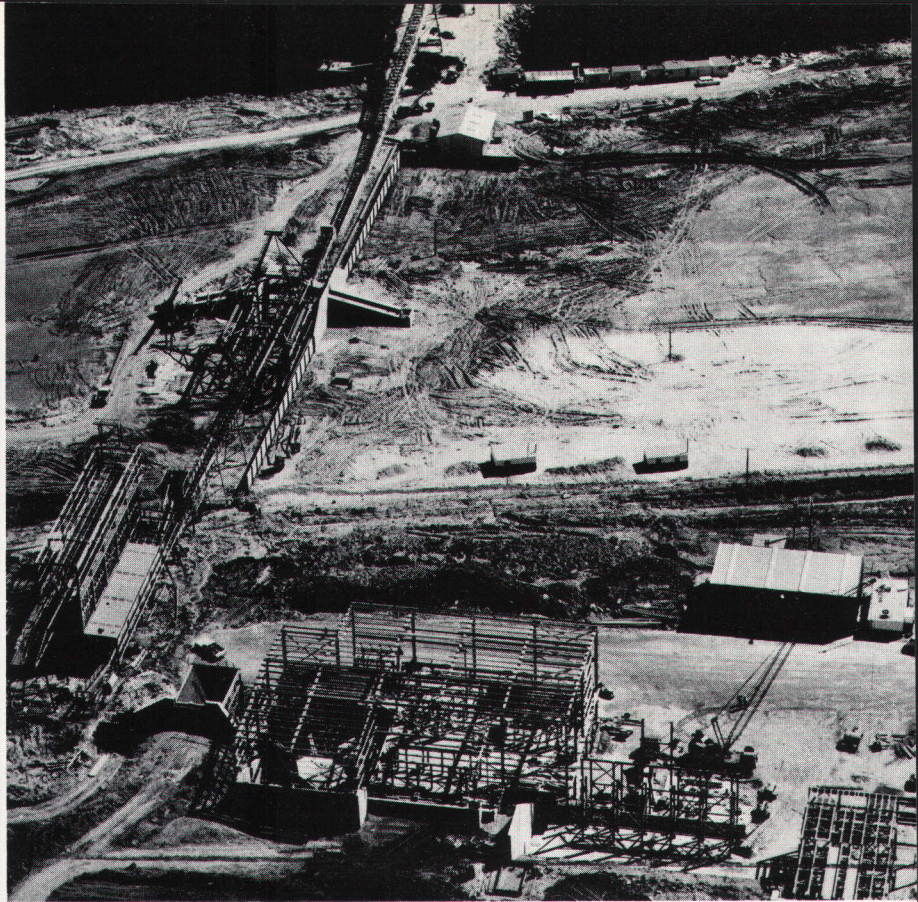
(c) Paid direct to hospitals by Commonwealth.

(d) Includes Ancillary Benefits: certain supplementary services for which a Fund Benefit payment, but no Commonwealth payment, is made e.g. home nursing, physiotherapy, provision of spectacles, orthoptics, chiropractics, theatre fees.



Construction site for the Gordon River Dam, mid-1971

(Vern Reid)



*Associated Pulp and Paper Mills Pty Ltd Long Reach woodchip plant, August 1971
(Vern Reid)*



Devils Gate Dam on the Forth River

(H.E.C.)

Medical Insurance: Members and Benefits

Particulars	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70
Registered Organisations (a) no.	10	10	9	9	9	9
Members (a) .. '000	108	114	110	115	113	116
Medical Services During Year '000	771	802	818	962	1,065	1,165
Medical Benefits Paid—						
Commonwealth Benefits \$'000	1,000	1,140	1,195	1,446	1,609	1,725
Fund Benefits (b) .. \$'000	1,150	1,256	1,336	1,436	1,704	1,916

(a) At end of year.

(b) Includes Ancillary Benefits—see note (d) in preceding table.

Pharmaceutical Benefits: Under this scheme, drugs and medicines for patients, who are required to pay a flat charge of \$1, can be prescribed by a medical practitioner or by a hospital. Not all drugs and medicines can be supplied under this scheme, but the Health Department's list of approved pharmaceutical preparations is extensive and, in practice, over 70 per cent of all doctors' prescriptions are available as pharmaceutical benefits. Under this scheme basic rate pensioners receive their pharmaceutical requirements free of charge.

Commonwealth-Assisted Health Organisations

National Heart Foundation of Australia

This was established to promote research in cardio-vascular disease, to rehabilitate heart sufferers and to foster the dissemination of information about heart diseases. The State Division deals especially with rehabilitation and education. The State Government recognised the importance of this work by creating a Cardio-vascular Services section within its own Department of Health Services in 1967.

Other Organisations

Other organisations associated with public health and receiving Commonwealth grants are the Red Cross Blood Transfusion Service, the Royal Flying Doctor Service and the Tasmanian National Fitness Council; these have been dealt with in an earlier section.

Hospital Morbidity

Previous Year Books have contained sections dealing with mortality (death statistics) but this is the first appearance of a section devoted to morbidity (sickness statistics), specifically the morbidity experience of patients treated in Tasmanian public hospitals. Bureau tabulations in this field start with the year 1969, the task before then having been carried out by the State Department of Health Services. The new Bureau series uses computer processing and provides a wide range of analyses; what follows is necessarily a very condensed summary.

In the following tables particulars are given of all in-patients, treated in Tasmanian public hospitals, who left hospital during 1970. Patients still in hospital at the end of 1970 will be included in figures for the year in which

they leave hospital. Normal maternity cases are included, but babies born in hospital are included only if they receive treatment in excess of that provided for the newborn as a matter of routine.

Children aged up to nine years comprised almost 22 per cent of males and eleven per cent of females discharged. The high numbers in this age group were due principally to children receiving treatment for diseases of the respiratory system; this disease group accounted for 2,241, or about one-third, of discharges of children under ten years.

Accidents were the main cause of hospitalisation of males in the fifteen to 34-year age group. Injuries caused by accidents, poisoning and violence accounted for 1,908 or 45 per cent of male patients in that age group.

Treatment Statistics

More than 16,000 operations were performed in public hospitals during 1970, the most frequent being appendicectomies, manipulation of closed fractures, dental extractions and tonsillectomies.

The following table analyses patients by age-group and length of stay in hospital:

Patients Treated in Public Hospitals: By Age Group and Average Length of Stay 1970

Age Group	Males			Females		
	Number	Per Cent of Total	Average Length of Stay (Days)	Number	Per Cent of Total	Average Length of Stay (Days)
Days—						
Under 28	165	0.91	10	151	0.57	12
28-365	749	4.13	9	599	2.27	10
Years—						
1-4	1,613	8.90	6	1,166	4.43	6
5-9	1,381	7.63	6	1,029	3.90	5
10-14	1,052	5.80	6	771	2.93	6
15-19	1,395	7.70	9	2,866	10.88	7
20-24	1,165	6.43	9	4,981	18.90	8
25-29	889	4.90	9	3,387	12.85	8
30-34	753	4.15	9	1,936	7.35	8
35-39	725	4.00	10	1,328	5.04	9
40-44	941	5.19	11	1,092	4.14	11
45-49	928	5.12	12	1,055	4.00	10
50-54	995	5.49	13	959	3.64	12
55-59	1,152	6.36	13	867	3.29	13
60-64	1,162	6.41	15	924	3.51	14
65-69	1,026	5.66	17	897	3.40	18
70-74	787	4.34	18	828	3.14	21
75 and Over ..	1,240	6.88	25	1,518	5.76	31
Total ..	18,118	100.00	11.4	26,354	100.00	10.5

The next table analyses the same patients by condition treated and by length of stay:

Patients Treated in Public Hospitals: By Condition Treated and Average Length of Stay, 1970

Principal Condition Treated	Males			Females		
	Number of Patients	Total Days in Hospital	Average Stay (Days)	Number of Patients	Total Days in Hospital	Average Stay (Days)
Infective and Parasitic Diseases ..	635	9,701	15	622	6,022	10
Neoplasms ..	834	15,143	18	1,017	15,774	16
Endocrine, Nutritional and Metabolic Diseases ..	265	3,234	12	417	6,903	17
Mental Disorders ..	718	8,545	12	925	13,636	15
Diseases of the—						
Blood and Blood-forming Organs	148	1,334	9	186	1,994	11
Nervous System and Sense Organs	650	7,934	12	733	7,982	11
Circulatory System	1,965	35,890	18	1,745	37,314	21
Respiratory System	2,856	24,135	8	2,063	14,840	7
Digestive System	1,946	17,515	9	1,650	14,779	9
Genito-Urinary System ..	755	7,638	10	1,716	13,737	8
Skin and Subcutaneous Tissue	394	3,461	9	321	3,113	10
Musculoskeletal System and Connective Tissue ..	691	10,745	16	645	10,125	16
Congenital Anomalies	287	3,798	13	242	2,872	12
Childbirth, Complications of Pregnancy and the Puerperium	..	..	..	9,500	75,483	8
Certain Causes (a) of Perinatal Morbidity and Mortality ..	151	3,034	20	152	3,043	20
Symptoms and Ill-defined Conditions	1,358	8,296	6	1,395	15,664	11
Accidents, Poisoning and Violence ..	4,074	41,036	10	2,201	26,328	12
Other Special Admissions or Consultations ..	391	4,398	11	824	6,352	8
Total ..	18,118	205,837	11	26,354	275,961	10

(a) Includes toxæmia of pregnancy, conditions of placenta, birth injury, etc.

Examination of the above table reveals that the seeming imbalance between total male and total female patients is largely accounted for by one classification: 'childbirth, complications of pregnancy and the puerperium'. If data under this classification were eliminated, then male patients would outnumber female patients; the most significant classification explaining this difference is 'accidents, poisoning and violence' where males outnumbered females almost two to one. One underlying cause is the greater exposure of males to industrial and road traffic accidents.

Accidents, Poisoning and Violence

The previous table was compiled to show the conditions treated in extremely broad categories, but there are available more detailed dissections of each category. For example, the classification 'accidents, poisoning and violence' is analysed in terms of the external cause of the injury and the nature of the principal injury.

The following table deals with the patients in the class 'Accidents, Poisoning and Violence' (6,275 persons in total):

**Patients Treated in Public Hospitals: By External Cause of
Principal Injury, 1970**
(Number)

External Cause of Injury	Nature of Principal Injury			
	Fracture	Dislocation or Sprain	Internal	Laceration
ACCIDENTAL OCCURRENCES				
Vehicle Accident—				
Railway	1	..	1	1
Road Vehicle—Motor Car Involving—				
Occupant	224	20	139	107
Pedal Cyclist	12	1	..	7
Pedestrian	86	3	41	34
Other Person (a)	270	25	208	205
Other	42	4	52	23
Water Transport	12	2	4	..
Air and Space Transport	1	..	..	..
Poisoning—Drugs and Medicaments .. .. .	..	..	..	..
Other Solid and Liquid Substances .. .. .	..	..	..	..
Gases and Vapours .. .. .	..	..	..	..
Fall—On or From Stairs, Steps, Ladders or Scaffolding	64	6	34	12
From One Level to Another	131	21	64	29
On Same Level	139	18	29	22
Other (a)	488	36	93	92
Conflagration .. .. .	..	..	..	..
Ignition of Clothing or Inflammable Material .. .. .	..	..	..	..
Fires—Controlled .. .. .	..	..	..	..
Other (a) .. .. .	..	..	..	..
Drowning and Submersion .. .. .	..	..	..	..
Firearm Missiles	7	2	4	30
Other Accidents (b)	333	239	232	707
Total	1,810	377	901	1,269

OTHER OCCURRENCES

Suicide and Self-Inflicted Injury By—				
Poisoning—With Solid or Liquid Substances .. .. .	..	..	..	..
By Gases in Domestic Use .. .. .	..	..	..	..
Other Means	3	..	2	21
Homicide and Injury—				
Unlawfully Inflicted	63	1	44	46
Cause of Infliction Undetermined .. .. .	..	..	..	..
Total	66	1	46	67
Grand Total	1,876	378	947	1,336

**Patients Treated in Public Hospitals: By External Cause of Principal Injury,
1970—continued
(Number)**

External Cause of Injury	Nature of Principal Injury— <i>continued</i>				Total
	Adverse Effects of Medical Agents	Toxic Effects of Non- Medical Agents	Burn	Other (a)	

ACCIDENTAL OCCURRENCES

Vehicle Accident—					
Railway .. .. .	..	..	..	1	4
Road Vehicle—Motor Car Involving—					
Occupant .. .. .	..	..	..	11	501
Pedal Cyclist .. .. .	..	..	..	..	20
Pedestrian .. .. .	..	..	..	4	168
Other Person (a) .. .. .	..	..	..	25	733
Other .. .. .	..	..	..	4	125
Water Transport .. .. .	..	..	..	5	23
Air and Space Transport .. .. .	..	..	..	..	1
Poisoning—Drugs and Medicaments	249	..	..	..	249
Other Solid and Liquid Sub- stances .. .. .	..	109	..	..	109
Gases and Vapours .. .. .	..	10	..	..	10
Fall—On or From Stairs, Steps, Ladders or Scaffolding .. .. .	..	..	..	1	117
From One Level to Another .. .. .	..	..	..	9	254
On Same Level .. .. .	..	..	..	2	210
Other (a) .. .. .	..	..	..	12	721
Conflagration .. .. .	..	..	2	..	2
Ignition of Clothing or Inflammable Material .. .. .	..	..	51	..	51
Fires—Controlled .. .. .	..	..	19	..	19
Other (a) .. .. .	..	..	17	..	17
Drowning and Submersion .. .. .	..	..	..	14	14
Firearm Missiles .. .. .	..	..	..	2	45
Other Accidents (b)	16	43	210	208	1,988
Total	265	162	299	298	5,630

OTHER OCCURRENCES

Suicide and Self Inflicted Injury By—					
Poisoning—With Solid or Liquid Sub- stances	424	12	..	..	436
By Gases in Domestic Use .. .. .	..	2	..	..	2
Other Means .. .. .	..	4	1	5	36
Homicide and Injury—					
Unlawfully Inflicted .. .. .	..	1	..	11	166
Cause of Infliction Undetermined	5	1	..	..	6
Total	429	20	1	16	646
Grand Total	693	182	300	314	6,275

(a) Includes unspecified cases where applicable.

(b) Includes, as principal injuries, sixteen under 'Adverse Effects of Medical Agents'; 249 under 'Complications of Medical or Surgical Care'; and sixteen under 'Other' which were due to surgical and medical complications and misadventures.

Operations: Some of the more frequently performed operations are shown in the following table:

Principal Operation Performed	Males			Females		
	Number of Patients	Total Days in Hospital	Average Stay (Days)	Number of Patients	Total Days in Hospital	Average Stay (Days)
Tonsillectomy and/or Adenoidectomy ..	283	839	2.96	264	855	3.24
Dental Extraction ..	213	394	1.85	219	266	1.21
Oesophagoscopy ..	57	336	5.89	54	398	7.37
Bronchoscopy ..	73	1,155	15.82	42	483	11.50
Laparotomy ..	74	1,383	18.69	91	1,589	17.46
Repair of Inguinal Hernia ..	297	2,493	8.39	31	412	13.29
Appendectomy ..	352	2,832	8.05	326	2,399	7.36
Sigmoidoscopy ..	57	508	8.91	51	460	9.02
Cholecystectomy ..	68	1,362	20.03	177	2,712	15.32
Cystoscopy ..	280	3,352	11.97	195	2,158	11.07
Prostatectomy (all types) ..	155	2,901	18.72	..	..	..
Hysterectomy (all types) ..	..	..	..	264	4,511	17.09
Curettage of Uterus ..	..	..	..	540	1,924	3.56
Dilatation and Curettage ..	..	..	..	479	1,629	3.40
Manipulation of Closed Fracture ..	249	4,034	16.20	185	2,390	12.92
Open Reduction with Fixation ..	128	4,949	38.66	122	6,134	50.28
Amputations ..	114	1,848	16.21	55	2,165	39.36
Stripping of Varicose Veins ..	32	288	9.00	105	940	8.95

Chapter 12

LAW, ORDER AND PUBLIC SAFETY

LAW IN TASMANIA

Origin and Evolution of Tasmanian Law

Original Charters

By letters patent and Royal instructions issued by King George III in 1787, Captain Arthur Phillip was authorised and empowered to constitute and appoint justices of the peace, coroners, constables, and other necessary officers and ministers for the better administration of justice and for putting the law in execution in the colony of New South Wales (which then included what is now the State of Tasmania). A warrant for a Charter was issued to establish courts of civil and criminal jurisdiction. It provided that 'Our present and all Our future governors and lieutenant governors and Our judge advocate for the time being shall be justices of the peace within the said place or settlement and that all and every such justice and justices of the peace shall have the same power to keep the peace, arrest, take bail, bind to good behaviour, suppress and punish riots, and do all other matters and things with respect to the inhabitants residing or being in the place or settlement aforesaid as, justices of the peace have within that part of the Kingdom of Great Britain called England within their respective jurisdictions'.

By a subsequent Charter in 1814 the Deputy Judge Advocate was added as a justice of the peace. Meanwhile, within a year of the occupation and settlement of Van Diemen's Land, warrants had been issued in 1804 appointing a justice of the peace for Van Diemen's Land and another justice at Port Dalrymple.

Supreme Court of Van Diemen's Land

In 1823 the Imperial Government passed an Act empowering King George IV, as a temporary measure, to institute a Court of Judicature to be styled the Supreme Court of Van Diemen's Land. It began its activities in May 1824, with Sir John Lewes Pedder as Chief Justice. The Court superseded the Lieutenant Governor's Court, of civil jurisdiction only, which had been set up in 1815 under a Deputy Judge Advocate. In 1828 the Imperial Parliament passed the Australian Courts Act, which is usually known as the Huskisson Act. It empowered His Majesty, as a permanent measure, to establish the Supreme Court of Van Diemen's Land as a court of record having cognisance of all pleas, civil, criminal or mixed, and jurisdiction in all cases as fully as His Majesty's Courts at Westminster. The Court was constituted a Court of Oyer and Terminer and Gaol Delivery and was also granted equitable, admiralty and ecclesiastical jurisdiction.

Courts of General Sessions have a similar history in some respects as their creation by the Colonial Legislature was authorised by the Huskisson Act and they too are now regulated by the *Local Courts Act* 1896.

Other Imperial Statutes that need to be mentioned in connection with the origin and evolution of Tasmanian law are the *Australian Constitutions Act* 1850, which empowered the Colonial Legislature to make provisions for the better administration of justice and for defining the constitution of the Courts of Law and Equity and of juries within the Colony; and also the *Colonial Laws Validity Act* 1865 which recognised that a Colonial Legislature at all times had full power within its jurisdiction to establish Courts of Judicature, and to abolish and reconstitute them, to alter their constitution, and to make provision for the administration of justice in them.

The Huskisson Act also empowered the Colonial Legislature to constitute Courts of Quarter Sessions with power and authority to try in a summary way all crimes, misdemeanours and other offences or misconduct not punishable by death. The Legislature of Van Diemen's Land accordingly instituted Courts of Quarter Sessions, which were also given jurisdiction to hear appeals from justices of the peace. In 1857 the Colonial Parliament passed a further Act providing for the appointment of Recorders to hold Courts of General Sessions as Courts of Criminal Jurisdiction. Two years earlier it had passed the *Magistrate's Summary Procedure Act* and the *Magistrate's Criminal Procedure Act*, which defined the duties of Justices of the Peace concerning summary convictions and orders and persons charged with criminal offences. These latter two Acts were subsequently superseded by the *Justices Procedure Act* 1919 and finally by the *Justices Act* 1959. Courts of Quarter Sessions have long ceased to exist in Tasmania.

All persons convicted of offences before the Court were to be liable to suffer the same pains, penalties and forfeitures as persons similarly convicted in England. Offences were to be prosecuted by information in the name of the Attorney-General or other officers duly appointed by the Governor. By leave of the Court, however, a private person could bring a criminal information against another person.

The Huskisson Act also provided that all laws and statutes in force within the realm of England at the time of the passing of the Act should be applied in the administration of justice in the Courts of Van Diemen's Land so far as the same could be applied within the Colony. The Governor was given the power to resolve by ordinance such doubts as might arise as to the applicability of English law and to limit or modify such law. Until any such ordinance might be made, questions of doubt were to be settled by the Supreme Court.

Pursuant to the Huskisson Act, the Charter of Justice was granted by King William IV in 1831. By this Charter, the Supreme Court of Van Diemen's Land was created and constituted a Court of Record consisting of the Chief Justice and the Puisne Judge. The Huskisson Act had given the Judges power to make rules and orders regarding the practice and procedure in proceedings before the Court but, in 1854, the Legislature of Van Diemen's Land passed the *Common Law Procedure Act* which regulated all such matters and this Act was replaced many years later by the present statute, the *Supreme Court Civil Procedure Act* 1932.

Origin of Other Courts

The Huskisson Act empowered the legislature of Van Diemen's Land by laws or ordinances to institute Courts of Requests with power and authority to hear and determine, in a summary way, claims in debt or damages not exceeding \$20, to be held before a Commissioner to be appointed by His Majesty. In the exercise of this power the Colonial Legislature in 1829 passed an Act 'to institute Courts of Requests' and since that date a number of statutes dealing with the subject have been passed. Courts of Requests are now regulated by the *Local Courts Act* 1896.

Juries

Tasmanian legislation regulating juries seems to have been first passed in 1830 although, for many years before that date, the introduction of the British system of trial by jury in civil and criminal cases had been persistently urged in the colony. The *Hobart Town Gazette* shows that juries had been employed in the colony for the trial of criminal cases from the establishment of the Supreme Court in 1824. Juries remain as the tribunal for trying indictable criminal cases and there is a limited right to a jury in civil actions, although in 1935 they were abolished for the purpose of trying motor-accident cases.

Although the Tasmanian jury system was based on the English system it has, since 1934, embodied the principle of allowing *majority* decisions in certain circumstances instead of requiring the *unanimous* decisions once characteristic of jury usage in England and most other countries.

Civil cases have a seven-member jury and, if after three hours' deliberation a seven-nil decision cannot be reached, a five-two decision is accepted. If the minimum five-two decision cannot be reached after four hours, the jury may be discharged.

In criminal cases, similar principles apply except that a ten-two decision is accepted in lieu of twelve-nil after stipulated periods of deliberation. In the case of crimes punishable with death, twelve-nil is necessary to convict, but ten-two can bring in a verdict of not guilty, or not guilty of the capital crime, but guilty of a lesser crime. Capital punishment was abolished in 1968.

The Present Law Court System*Courts of Petty Sessions*

For particular municipalities in the State, there is a Court of Petty Sessions. The Court is constituted by a stipendiary magistrate (who must be a legal practitioner or barrister for not less than five years) or by two or more lay justices sitting in Petty Session. In major centres of population, a Court sits regularly and, in smaller centres, a Court sits less frequently or is convened as occasion requires.

A Court of Petty Sessions has jurisdiction over all summary offences and also over certain indictable offences at the option of the defendant. Under the *Justices Act 1959*, a defendant may choose summary trial in the Court of Petty Sessions when charged with the following crimes: (i) Escape or rescue; facilitating escape of a prisoner or harbouring an offender; assisting escape of a criminal lunatic; rescuing goods legally seized; making a false declaration (or statement). (ii) Stealing; killing an animal with intent to steal; unlawfully branding an animal; obtaining goods by a false pretence; cheating; fraud in respect of payment for work; receiving stolen property. (In all these cases the value of the property concerned must exceed \$20 but not \$400. If the value does not exceed \$20 the defendant will be tried summarily. If it exceeds \$400 he will be committed for trial in the Supreme Court.) (iii) Breaking a building other than a dwelling-house. (It is necessary for the defendant to be committed to the Supreme Court for trial where it is alleged that in the commission of the offence: property to the value of more than \$400 has been stolen; violence has been used or offered to any person in or about the building; the person had in his possession a gun, pistol, dagger, cosh, or other offensive weapon; explosives were used; or the defendant intended to commit a crime other than stealing.) (iv) Forgery; uttering. (The complaint must be for an offence in respect of a cheque for not more than \$400.)

The following table shows the number of cases tried in the lower courts over a five-year period. (Minor traffic offences settled without court appearance are excluded.)

Cases Tried in Lower Courts

Offence			1966	1967	1968	1969	1970
Offences Against—The Person ..	Males		640	779	786	891	953
	Females		20	25	14	32	34
Property ..	Males		3,558	3,604	3,937	3,987	4,095
	Females		352	342	441	335	397
The Currency ..	Males		171	116	151	179	340
	Females		100	73	72	21	31
Good Order ..	Males		1,957	1,804	1,819	2,082	1,962
	Females		106	76	100	107	70
Traffic Regs. ..	Males		23,626	23,067	20,450	18,717	19,935
	Females		1,479	1,391	1,264	1,130	1,097
All Other Offences (a) ..	Males		9,197	10,098	8,906	8,551	7,185
	Females		764	481	734	411	520
Total Offences ..	Males		39,149	39,468	36,049	34,407	34,470
	Females		2,821	2,388	2,625	2,036	2,149

(a) Includes offences mainly against liquor, education, neglected children, revenue, gambling suppression laws, desertion of wives and children, perjury and subornation, and conspiracy.

The following table shows cases tried and their results. (Minor traffic offences settled without court appearance are excluded.)

Lower Courts, 1970

Offence	Cases Tried	Results of Trials				
		Convictions	Committed to Higher Courts	Ad-journed Sine Die	Dismissed or With-drawn(a)	Re-manded
MALES						
Offences Against—The Person ..	953	585	152	76	123	17
Property ..	4,095	2,661	782	313	284	55
The Currency ..	340	238	40	47	15	..
Good Order..	1,962	1,549	1	253	154	5
Traffic Regula-tions ..	19,935	14,251	1	2,263	3,404	16
All Other Offences (b)	7,185	5,703	4	504	961	13
Total	34,470	24,987	980	3,456	4,941	106
FEMALES						
Offences Against—The Person ..	34	17	4	6	7	..
Property ..	397	281	28	55	33	..
The Currency ..	31	31	..	..	..	..
Good Order..	70	57	..	8	5	..
Traffic Regula-tions ..	1,097	777	..	85	235	..
All Other Offences (b)	520	421	..	23	76	..
Total	2,149	1,584	32	177	356	..
PERSONS						
Total	36,619	26,571	1,012	3,633	5,297	106

(a) 'Dismissed' is equivalent to 'not guilty' in higher courts.

(b) Includes offences mainly against liquor, education, neglected children, revenue, gambling suppression laws, desertion of wives and children, perjury and subornation, and conspiracy.

Courts of Request

These are constituted as courts with civil jurisdiction for particular municipalities in accordance with the authority given by the *Local Courts Act* 1896. Courts are held before a commissioner, who is usually a stipendiary magistrate. The Attorney-General fixes the dates on which these courts sit.

Every Court has jurisdiction throughout the State but a plaintiff may lose costs if he brings his action in a Court other than the Court nearest to which the cause of action arose.

The jurisdiction of a Court of Requests, which is a court of record, covers all personal actions where the debt or damage claimed does not exceed the maximum amount fixed under the Act. Since 1 November 1966, the sum of \$1,500 has been fixed as the maximum jurisdiction for a Court of Requests in respect of a debt or liquidated sum, and \$1,000 in any other case.

The commissioner alone determines all questions of fact as well as of law and his decision is the judgment of the Court, unless a jury is required. In any action either party may require a jury as of right and there is power for the commissioner to order that an action be tried by a jury, even though neither party has required it.

Law and equity are administered concurrently in the Court and the general principles of practice in the Supreme Court are adopted and applied in cases not expressly provided for in the Act or Rules.

Courts of General Sessions

A Court of General Sessions with civil jurisdiction is constituted under the *Local Courts Act* 1896 for particular municipalities of the State. The cities are excluded, civil actions there being dealt with by Courts of Requests. A Court of General Sessions is constituted by a chairman (elected by the justices for the municipality) and at least one other justice. All questions are decided by a majority of the justices present and, if they are equally divided in opinion, the chairman has both a deliberative and a casting vote. If there is business requiring its attention, the Court sits at times fixed by the Attorney-General.

A Court of General Sessions has jurisdiction to deal with civil proceedings of a minor nature and the limit of the Court's jurisdiction has been fixed at the sum of \$100.

Litigation in Civil Courts

The following table shows the number of plaints entered and writs issued in the lower and higher Tasmanian courts over a three-year period:

Litigation in Civil Courts

Particulars	1968		1969		1970	
	Number	Amount	Number	Amount	Number	Amount
Lower Courts—		\$'000		\$'000		\$'000
Plaints Entered	40,919	3,492	42,250	3,598	41,245	3,716
Verdicts for Plaintiff	18,037	1,528	20,949	1,540	19,732	1,681
Higher Courts—						
Writs Issued	1,135	n.a.	1,326	n.a.	1,424	n.a.

The Supreme Court of Tasmania

The Supreme Court of Tasmania is constituted by the Chief Justice and four Puisne Judges. Regular sittings of the Court are held at Hobart, Launceston and Burnie, although the Court is empowered to sit and act at any time and at any place for the exercise of any part of the jurisdiction and business of the Court.

The Court has jurisdiction over all causes, both civil and criminal, except those reserved to the High Court of Australia under the Commonwealth Constitution. It also exercises federal jurisdiction in matters such as matrimonial causes, bankruptcy, etc. Its civil jurisdiction extends to all causes of action, whatever the amount involved may be, and its criminal jurisdiction includes the trial of all indictable offences. In civil cases, the Court has power to call in the aid of one or more assessors specially qualified to assist in the trial of the actions, but is not bound by the opinion or advice of any such assessor.

There is an appeal to the Supreme Court of Tasmania from all inferior courts and from many statutory tribunals.

Law and equity are administered concurrently in the Court which is enjoined to grant, either absolutely or on such terms and conditions as seem just, all such remedies to which any of the parties may be entitled so that, as far as possible, all matters in controversy between the parties may be completely and finally determined, and a multiplicity of legal proceedings avoided. The Judges, on the recommendation of the Rules Committee, are empowered to make rules regulating the practice and procedure of all proceedings in the Court.

The jurisdiction of the Court is usually exercised by a Judge of the Court and from his decision there is an appeal to the Full Court of the Supreme Court of Tasmania. A Full Court consists of two or more Judges of the Court. The Full Court is also a Court of Criminal Appeal under the Criminal Code. The latter is a Court to which appeals may be brought by the Crown or by an accused person where an indictable offence is involved. In some cases, there is an appeal as of right but, in other cases, special leave is required.

The following table shows the number of cases tried in the higher courts, and the number of convictions:

Supreme Court Actions, 1970

Offence	Cases Tried		Convictions	
	Males	Females	Males	Females
Offences Against the Person—				
Murder	4	..	3	..
Manslaughter—Other than While Driving	3	1	3	1
While Driving	2	..	1	..
Culpable Driving, inc. Causing Death by Dangerous Driving (other than Manslaughter)	16	..	12	..
Rape	12	..	4	..
Other Unlawful Carnal Knowledge	37	..	34	..
Incest	5	..	4	..
Other Offences Against Females	5	..	5	..
Indecent Practices between Males	8	..	8	..
Unnatural Carnal Knowledge	9	..	9	..
Abduction	1	..	1	..
Abortion .. .. .	..	2	..	..
Robbery, excl. Stealing from the Person	17	1	14	1
Malicious Wounding	10	..	2	..
Common Assault	5	..	4	..
Other Offences Against the Person	2	..	2	..

Supreme Court Actions, 1970—*continued*

Offence	Cases Tried		Convictions	
	Males	Females	Males	Females
Offences Against Property—				
Burglary; Break and Enter; Break, Enter and Steal	135	8	124	7
Receiving, incl. Possession of Stolen Goods ..	15	2	10	2
Fraud and False Pretences	15	..	13	..
Arson, n.e.i.	6	..	5	..
Stealing from the Person	56	4	48	3
Other Offences Against Property	1	..	..	..
Forgery and Offences Against the Currency	8	..	8	..
All Other Offences	11	..	9	..
Total (a)	383	18	323	14

(a) There are fewer Supreme Court cases tried than the number committed from the lower courts would lead one to expect. This is because: (i) *complaints* often embrace several offences in the lower courts; (ii) some cases are not proceeded with. Higher court cases often proceed under different offences' titles to those under which the lower court committals were made.

The following table shows the number of convictions in the higher courts over a five-year period:

Supreme Court Cases: Convictions

Offence	1966	1967	1968	1969	1970
Offences Against—The Person	68	111	76	92	108
Property	133	137	150	177	212
Forgery and Offences Against the Currency	1	4	11	11	8
All Other Offences	2	2	6	12	9
Total	204	254	243	292	337

The High Court of Australia

This Court was created by the Commonwealth Constitution and it has both original and appellate jurisdiction. It is constituted by the Chief Justice of Australia and six other Justices.

There is an appeal as of right to the High Court from the Supreme Court of the State in any civil matter where the sum involved amounts to at least \$3,000 or where the decision under appeal affects the status of any person under the laws relating to aliens, marriage, divorce, bankruptcy or insolvency. In other cases (including criminal cases) there is an appeal to the High Court if leave or special leave is granted.

Sittings of the High Court of Australia are held in each capital city and one sitting is held in Hobart each year if the volume of business warrants it. Otherwise, Tasmanian cases are usually heard either in Melbourne or Sydney.

Privy Council

An appeal lies direct from the Supreme Court to the Privy Council in a civil action where the amount involved is not less than \$2,000 and in other cases an appeal may be heard by special leave. Special leave may also be obtained to appeal to the Privy Council from a decision of the High Court of

Australia. However, as from 1 September 1968 the High Court of Australia became the final court of appeal in all cases involving Commonwealth law (i.e. in litigation involving laws of the Commonwealth which was instituted after 31 August 1968, there is no right of appeal to the Privy Council).

Tribunals

There are many tribunals which are not true courts and the powers and functions of these depend upon the detailed provisions of the particular statute under which they operate. Certain specialised courts have been created by statute. For example, there is the Wardens' Court constituted under the *Mining Act* 1929 and the Licensing Court constituted under the *Licensing Act* 1932.

Coroner's Courts

Coroners are appointed by the Governor and have jurisdiction throughout the State. Under the *Coroner's Act* 1957, a coroner may hold an inquest: (i) concerning the manner of death of any person who has died a violent or unnatural death, who died suddenly without the cause being known, or who died in a prison, or mental institution; at the direction of the Attorney-General, he may also be required to hold an inquest concerning any death; and (ii) concerning the cause of any fire if the Attorney-General has directed, or has approved a request by the owner or insurer of the property; or at the request of the Fire Brigades Commission or the Rural Fires Board.

The coroner usually acts alone in holding an inquest, but either the Attorney-General or the relatives of the deceased may request that a four or six-man jury be empanelled. After considering a post-mortem report the coroner may dispense with an inquest, unless the circumstances of death make an inquest mandatory under the Act.

The duty of the court is to determine who the deceased was, and the circumstances by which he came to his death. Medical practitioners and other persons may be summonsed to give evidence. Viewing of the body is not essential but in the case of the death of an infant in a nursing home, the coroner may also enquire generally into the conditions and running of the institution. On the evidence submitted at the inquest, the coroner can order a person to be committed to the Supreme Court and can grant bail. In the case of murder, a coroner can issue a warrant for apprehension.

Children's Courts

A 'child' in this jurisdiction is one under the age of seventeen years. The Court, before finally disposing of the case, must receive a report from a child welfare officer (the representative of the Director of Social Welfare), unless the Court considers the offence trivial or the Director decides not to provide one. A child's parent has the right to be heard and to examine and cross-examine witnesses, or to be represented by counsel, also a parent can be compelled to attend the hearing if this imposes no unreasonable inconvenience.

In summary proceedings, the Court normally enters a conviction against a child only if it imposes a sentence of imprisonment but there may be special circumstances in some cases which persuade it to record a conviction.

Children under sixteen years cannot be sentenced to imprisonment and children of sixteen years cannot be sentenced for more than two years, in aggregate. Minimum penalties imposed by statute do not apply to children; for those under fourteen years the maximum fine is \$20, and for those over fourteen years, \$50. The Court may impose a supervision order to bring the child under the guidance of a child welfare officer or, if over fifteen years, of a probation

officer (welfare officers *may* supervise children over fifteen years if the Court so directs). Alternatively, the Court may declare the child a ward of the State, placing him under the control of the Director of Social Welfare until his eighteenth birthday, unless sooner released; it may also direct that a ward be committed to an institution.

Neglected or uncontrolled children are in the Court's jurisdiction; it may make a supervision order, impose wardship or bind the parents over to provide proper care and control, and comply with other directions. If parents have contributed to a child's offence, by failing to control the child, they may also be charged, convicted, fined, ordered to pay for damage and obliged to enter into a recognisance for the good behaviour of the child for up to twelve months.

Unlike a Children's Court, the Supreme Court is in no way inhibited in imposing a penalty on a child; in addition to its ordinary sentencing powers, it may make supervision or wardship orders, and commit a child to an institution. If a child is sentenced to imprisonment, the responsible Minister may direct that the sentence be served in a place other than a gaol.

Statistics of offences for which children were reported appear in Chapter 11 under 'Department of Social Welfare'.

Bankruptcy

On 4 March 1968, the Federal *Bankruptcy Act* 1966-1970 (repealing the Act of 1924-1965) came into operation. The Federal Court of Bankruptcy exercises general jurisdiction in N.S.W., A.C.T. and Victoria while the Supreme Court of Tasmania exercises Federal jurisdiction in Tasmania.

Under the new legislation, a person unable to meet his debts may voluntarily present to the Registrar in Bankruptcy a petition against himself and become a bankrupt under section 55; if the Registrar does not accept the petition and refers it to the Court, he may be directed to accept it. A creditor may apply to the court for compulsory sequestration of a debtor's estate where the debt is not less than \$500. Where a debtor becomes bankrupt:

- (i) his property, not being after-acquired property, vests immediately in The Official Receiver in Bankruptcy;
- (ii) his after-acquired property vests in The Official Receiver in Bankruptcy, or if a private trustee has subsequently been appointed, then in that trustee.

A debtor may avoid sequestration, in some circumstances, by authorising a registered trustee to call a meeting of his creditors and take over the control of his property; or by authorising a solicitor to call a meeting of his creditors (Part X). The debtor's property is controlled by the trustee until the creditors resolve otherwise, or the Court orders otherwise, or a deed of assignment or arrangement is executed, or a composition is accepted, or the debtor dies or becomes bankrupt.

A person becoming bankrupt under the new Act may be automatically discharged from bankruptcy after the expiration of five years (section 149) unless discharged earlier by the Court. Undischarged bankrupts at 4 March 1968 were discharged three years later (4 March 1971) or five years from the date of the sequestration order, whichever was the later (unless discharged earlier by the Court). The Registrar, trustee or a creditor may lodge an objection to this type of discharge, and if it is not withdrawn the debtor must apply to the Court under section 150 if he desires to be discharged.

The following table shows the number of bankruptcies and private arrangements together with the assets and liabilities of debtors:

Tasmania: Bankruptcy Proceedings (a)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
Bankruptcies and Orders for Administration of Deceased Debtors' Estates—					
Number	69	71	100	121	123
Liabilities \$'000	297	299	602	589	839
Assets \$'000	165	101	247	359	227
Deeds of Assignment, Arrangement, Compositions and Schemes—					
Number	1	4	8	13	17
Liabilities \$'000	7	70	553	269	198
Assets \$'000	10	98	287	209	247
Total—					
Number	70	75	108	134	140
Liabilities \$'000	304	369	1,155	858	1,037
Assets \$'000	175	199	534	568	474

(a) Under legislation described in the 1968 *Year Book* (1964—4/3/68) and under legislation described herein (4/3/68-30/6/71).

Trade Practices Tribunal

The Commonwealth Parliament passed the *Trade Practices Act* 1965-1971 'to preserve competition in Australian trade and commerce to the extent required by the public interest'; due to constitutional limitation of Commonwealth power, provision was made in the Act for co-operation between the Commonwealth and the States, the provision being that each State could adopt complementary legislation if it so desired. In this way practices in both interstate and intrastate trade would be subject to scrutiny. No State has so far enacted complementary legislation. However, Tasmania, by its *Commonwealth Powers (Trade Practices) Act* 1966, chose to make a constitutional reference to the Commonwealth, enabling the Commonwealth to apply the Federal Act in Tasmania. An amendment to the Commonwealth Act for such extension was made in 1967.

The Commonwealth Act deals with agreements and practices where an element of restriction is involved and defines those which are 'examinable'. It established a Register of Trade Agreements to be kept by a Commissioner and obliges parties making examinable agreements to register them (certain agreements relating only to services are exempt). The Commissioner, on the basis of registered information, or of information from any other source, may consider an examinable agreement or a particular practice to contain restrictions *contrary to the public interest*, in which case he may institute proceedings before a Trade Practices Tribunal. It is the task of the Tribunal to determine whether the restrictions are contrary to the public interest; if this is the finding of the Tribunal, it has the power to make an order ending the practice, or restraining all or any of the parties from giving effect to, enforcing or purporting to enforce, the restrictive agreement.

Where the Tribunal has made a determination regarding an agreement or practice, a party to the proceedings may apply to a Review Division of the Tribunal for an order directing that the determination be reconsidered. Part IX of the Act makes it an offence to engage in collusive tendering or collusive bidding. Amendments in 1966 to the Commonwealth Act made provision among other things, for the control of the operations of shipping conferences. The Commonwealth Act operated from 1 September 1967.

The first proceedings in the Trade Practices Tribunal were commenced by the Commissioner on 29 January 1969 against Tasmanian Breweries Pty Ltd for alleged monopolisation. Following an unsuccessful challenge, in the High Court, to the Tribunal's power to deal with the case, preliminary hearing of proceedings began. They were adjourned indefinitely on 15 April 1970 when the company reached an agreement with the Commissioner which, in general, took the form of an undertaking not to require retailers to sell only the company's draught beer.

In 1971 the Act was amended to control the practice of resale price maintenance. The amendments made the practice unlawful except in relation to goods for which the Trade Practices Tribunal granted an exemption on the grounds of public interest. However, a decision of the High Court disclosed certain constitutional defects in the *Trade Practices Act 1965-1971*. On 14 October 1971 the Federal Government introduced the Restrictive Trade Practices Bill 1971 which is designed to replace the existing Act and overcome these constitutional defects.

The Licensing Court

The State Licensing Court was set up under the *Licensing Act 1932* and consists of a stipendiary magistrate (who is the chairman) and two Government nominees.

The Court is empowered to hear and determine: (i) applications for the granting of hotel and other liquor licences; (ii) applications for the registration or renewal of registration of clubs; and (iii) objections to the registration of clubs.

Since 1952 the *Licensing Act* has empowered the Court to determine the minimum standards of service, management, accommodation, structure and equipment which should apply to hotels, and also the qualifications required by persons holding or applying for licences.

The following table shows the total hotel bedroom accommodation available to the public during recent years:

Standard of Accommodation: Hotels

Date	Total Number of Bedrooms	Number of Bedrooms Furnished with—	
		Private Bath, Showers, Toilets and Hand-basins	Handbasins with Hot and Cold Running Water
31 Dec.—1957 ..	3,763	182	1,557
30 June—1966 ..	3,814	758	2,999
1967 ..	3,599	937	2,164
1968 ..	3,552	955	2,142
1969 ..	3,525	1,073	2,020
1970 ..	3,564	1,117	2,020
1971 ..	3,566	1,228	1,950

Every hotel in Tasmania is visited annually by a member of the Court and the Court's inspectors and the public health inspector make a thorough examination of each hotel prior to the annual sittings at which renewals of licences are considered. Reports are furnished for the information of the Court

and the Tourist Department. An officer of the Fire Brigades Commission also carries out an annual inspection to ensure that each hotel complies with the requirements of the Commission.

The following table shows the licences and club registrations operative:

Licensed Hotels, Restaurants, Clubs and Wholesale Licences

At 30 June					Hotels (a)	Restaurants (b)	Registered Clubs	Wholesale Licences	Total
1965	..	..	..	..	275	..	130	28	433
1966	..	..	..	..	271	..	131	29	431
1967	..	..	..	..	270	..	134	29	433
1968	..	..	..	..	267	..	138	29	434
1969	..	..	..	..	263	11	145	29	448
1970	..	..	..	..	264	16	146	30	456
1971	..	..	..	..	269	23	153	29	474

(a) Includes a small number of premises not providing accommodation and known as 'taverns'.

(b) Includes motels which have a licence for dining rooms only.

The Ogilvie ministry introduced 10 am to 10 pm bar trading hours before World War II and, in the post-war period, Tasmania's 10 pm closing contrasted with 6 pm closing in S.A., Victoria and N.S.W. However, N.S.W. in the 1950s and, more recently, Victoria liberalised their drinking laws so that S.A. was the only State with 6 pm closing in 1967 (when amending legislation was passed in that State).

In 1967, the Tasmanian *Licensing Act* 1932 was amended to allow 11.30 pm closing on Friday and Saturday nights for those hotels which desire to observe these hours and which obtain the necessary permits; 10 pm closing is now the rule for other nights (excluding Sunday) with provision nevertheless to obtain extension permits for special functions. The permitted age for drinking on licensed premises has been lowered from 21 to 20 years; restaurants complying with defined conditions can now obtain licences to sell liquor (previously diners could take their own liquor to certain restaurants, but not buy it on the premises); licensed restaurants can open till 11.30 pm six nights a week. Dining accommodation, kitchen specifications, etc. for licensed restaurants have to be of a very high order.

As an indication of the national beer consumption, Australia's per capita consumption was 27.7 gallons in 1970-71.

Other Australian liquor consumption figures per head for 1970-71 were: wine, 1.9 gallons and spirits, 0.4 proof gallons.

PRISONS

General

The establishment, regulation and conduct of prisons and the custody of prisoners in Tasmania are provided for under the *Prison Act* 1868 and 1908. Provision is made for the appointment by the Governor of a Controller of Prisons who is responsible for the supervision of gaols, including the initiation and implementation of correctional programmes for prisoners and staff training schemes.

Two justices are appointed each year to act as Visiting Justices. They visit the prison at least once per month to examine the treatment, behaviour and condition of prisoners, and the condition of the prison. They hear complaints with regard to offences committed in the gaol, and have power to punish offenders either by solitary confinement or by extending the term of imprisonment.

The main prison in Tasmania is at Risdon near Hobart, which has, as an outstation, the Farm Gaol at Hayes in the Derwent Valley. The prison at Launceston is limited in function, receiving only persons on remand or sentenced for periods not exceeding seven days.

The following table shows Prisons Department expenditure from Consolidated Revenue:

Prisons Department: Expenditure From Consolidated Revenue (\$'000)

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
Total Expenditure	587	683	781	816	858
Net Receipts (a)	18	18	(b) 42	4	42
Net Expenditure	569	664	739	812	816

(a) From prison industry and gaol farm activities described later in the text.

(b) Includes \$29,000 paid to the Prisons Department from a special State fire insurance trust fund towards the cost of fire damage.

Prisoners Received and Discharged

In the following table giving details of prisoners received into and discharged from Tasmanian prisons, no distinction is made between those on remand and those convicted and sentenced to imprisonment. (Figures for H.M. Prison, Risdon, include those held in custody at the Hayes Farm Gaol.)

Prisoners Received and Discharged, 1969-70

Particulars	H.M. Prison, Risdon		H.M. Prison, Launceston		Total	
	Males	Females	Males	Females	Males	Females
In Custody 30.6.69	346	10	9	..	355	10
Received 1969-70 ..	(a) 983	(a) 42	(b) 209	(b) 15	(c) 1,192	(c) 57
Discharged 1969-70	979	42	209	15	1,188	57
In Custody 13.6.70	350	10	9	..	359	10

(a) Includes transfers from H.M. Prison, Launceston: males 443; females 12.

(b) Excludes transfers to H.M. Prison, Risdon: males 443; females 12.

(c) *Net* receipts, i.e. transfers from Launceston to Risdon counted as Risdon receipts only.

Age of Prisoners

Young offenders account for a high and rising proportion of receipts, as in other countries. The proportion of convicted male prisoners under 25 years was 57 per cent in 1966-67; 58 per cent in 1967-68; 59 per cent in 1968-69 and 61 per cent in 1969-70. The following table shows the age of convicted prisoners received:

Ages of Convicted Prisoners Received at Risdon Gaol, 1969-70

Sex	Age Group (in Years)								Total
	Under 18	18 and 19	20-24	25-29	30-39	40-49	50-59	60 and Over	
Males	67	147	232	76	77	82	38	7	726
Females	3	3	4	2	7	4	2	2	27
Total	70	150	236	78	84	86	40	9	753

Prisoners' Offences

Just under forty-five per cent of the offences for which people were gaoled in 1969-70 involved 'stealing' and 'breaking and entering'. The following table shows the offences for which convicted prisoners were received:

Offences for Which Convicted Prisoners Were Received at H.M. Prison, Risdon, 1969-70

Offence	Offences by—			
	Males	Females	Persons	
			Number	Proportion of Total
				per cent
Stealing	456	22	478	25.8
Breaking and Entering	193	..	193	10.4
Unlawful Use, Motor Vehicle	99	..	99	5.3
Vagrancy	35	3	38	2.1
False Pretences	148	3	151	8.1
Housebreaking	61	..	61	3.3
Breach of Bond	62	3	65	3.5
Breach of the Traffic Act	24	..	24	1.3
Driving Whilst Licence Suspended	74	..	74	4.0
Driving Without Licence	16	..	16	0.9
Assault	42	1	43	2.3
Failure to Pay Fine	49	..	49	2.6
Damage to Property	111	..	111	6.0
Assaulting Police Officer	52	..	52	2.8
Receiving	17	..	17	0.9
Indecent Assault	24	..	24	1.3
Forgery	16	..	16	0.9
Uttering	15	..	15	0.8
Resisting Arrest	27	..	27	1.5
All Other	293	7	300	16.2
Total (a)	1,814	39	1,853	100.0

(a) The number of offences exceeds the number of prisoners received since some prisoners were convicted of multiple offences.

The next table classifies convicted prisoners according to the number of their previous convictions:

Convicted Prisoners Received in H.M. Prison, Risdon, Classified According to Number of Previous Convictions (a), 1969-70

Prisoners	Number of Previous Convictions				Total
	None	One	Two	Three or More	
Number Received	136	67	53	497	753
Percentage of Total	18.1	8.9	7.0	66.0	100.0

(a) Previous convictions may not necessarily have involved imprisonment.

Parole and Remission of Sentences

Good conduct remissions of up to one-third of sentence for prisoners sentenced to over three months may be granted by the Governor of the State on the Controller's recommendation. Prisoners may also be paroled on licence for the balance of their sentences.

The Indeterminate Sentences Board is appointed by the Governor of the State to review cases of prisoners serving indeterminate sentences (i.e. those where no fixed sentence is specified and the duration is dependent on the prisoner's conduct, etc.). Such prisoners may be released on a two-year licence and are subject to any conditions the Board may recommend, e.g. the supervision of a probation officer.

The following summary table shows the number of prisoners under the supervision of the Indeterminate Sentences Board:

Prisoners with Indeterminate Sentences at H.M. Prison, Risdon

Prisoners	1965-66	1966-67	1967-68	1968-69	1969-70
Received During Year ..	16	11	15	9	16
Discharged During Year ..	13	12	19	11	7
In Custody at 30 June ..	13	12	8	6	15

Capital Punishment

The death sentence has not been carried out in Tasmania since 1946, but judges have pronounced the sentence from time to time; in October 1968, the Attorney-General introduced a bill to abolish capital punishment and this was passed by the Parliament in December of that year.

Risdon Gaol

The Risdon Gaol, with provision for 324 prisoners, was opened in November 1960. Male prisoners were then transferred from the old Hobart Gaol and in June 1963, the Female Prison, the first entirely separate gaol for women to be built in the State, was opened on the Risdon site. The following table shows the daily average and highest number of prisoners in each year at Risdon Gaol over a five-year period:

Number of Prisoners, H.M. Prison, Risdon (a)

Prisoners	1965-66	1966-67	1967-68	1968-69	1969-70
Maximum Number	276	340	352	362	405
Daily Average	239	292	323	333	359

(a) Includes Hayes Farm Gaol.

The Risdon Gaol incorporates workshops which serve as a basis for vocational and trade training in such subjects as woodworking, tailoring, sheet metal working, bootmaking and breadmaking. Educational services include instruction during working hours for illiterate and semi-literate prisoners; tuition, on two evenings weekly, in general academic subjects to Secondary Schools Certificate standard; correspondence courses in University, School Certificate, Higher School Certificate and various technical and commercial subjects; tuition in English for migrants; and training three nights weekly in art and allied subjects. A classification committee interviews all prisoners on admission and decides on each individual's training programme.

Groups meet regularly for wood carving, art, pottery, toy making, chess and dramatics. Feature and documentary films are screened monthly, and concert parties visit the prison regularly. A comprehensive sports programme is conducted, including athletics, gymnastics, and competitions in cricket, volley ball and basketball.

The State Library of Tasmania helps with the prison library and library officers advise the prisoners on book selection each weekend; 5,000 volumes are immediately available, and a request programme operates. Over 650 books are borrowed from the library weekly.

Prison industries produce articles for government departments and institutions. The following table shows the receipts for prison industries over a five-year period. A new laundry installed in 1963 contributes to receipts from sales and services but the amounts are not a true indication of value to the government, as laundry is processed at a nominal figure for hospitals and other government institutions.

Gaol Suspense Account (Prison Industries)
(£)

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
Receipts (a)	73,246	89,604	70,094	99,852	82,901
Paid to Consolidated Revenue..	13,291	11,136	4,998	1,203	28,328

(a) Maintenance, material and capital charges are met from receipts, the balance being paid to Consolidated Revenue.

Hayes Farm Gaol

The Farm Gaol at Hayes ('Kilderry') is an outstation of the Risdon Prison. It is used to prepare men for a normal way of life through operation of the honour system. Up to 90 prisoners who are regarded as being worthy of trust, regardless of their age, length of sentence or type of offence, are held there.

The following table shows the receipts from sale of farm produce and the amounts paid to Consolidated Revenue over a five-year period:

Gaol Farm Suspense Account
(£)

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
Receipts (a)	62,590	63,170	60,480	73,687	80,622
Paid to Consolidated Revenue..	4,227	7,341	8,033	2,564	13,267

(a) Maintenance, material and capital charges are met from receipts, the balance being paid to Consolidated Revenue.

The 1,400 acre property has been developed into a model farm with a great diversity of farming activities. These include 65 acres for vegetables; a registered stud of Friesian cattle and Herefords; about 2,000 sheep for wool and fat lambs; a registered herd of Berkshire pigs; poultry; cropping of wheat, oats, lucerne and hay; breeding of children's ponies; hot house cultivation; and an experimental shrub and tree nursery, etc. An additional 310 acres of land was purchased near New Norfolk in May 1969. This property, about one mile north of the Hayes prison farm functions as an annexe to the Hayes property. All prison requirements of milk and butter are met and the surplus is supplied to the Royal Derwent Hospital. Building construction activities and machinery maintenance workshops also provide employment, but this range of prison industries is more limited than at Risdon. Similar educational and recreational facilities are provided.

Adult Probation Service

The Service deals with the problems of resettlement and re-employment of discharged prisoners. There is a counselling and guidance service so that ex-prisoners may be placed in occupations suited to their talents.

The Hobart and District Civic Rehabilitation Council, the Prisoners Aid Society, the City Mission, the Society of St Vincent de Paul, chaplains of the various churches, and other voluntary aid organisations, give material and moral assistance to serving and discharged prisoners.

The Tasmanian Police Force

History

The development of an organised Police Force in Tasmania commenced when Governor Collins arrived, bringing with him a body of civilians known as the 'Night Watch' which had been formed at the settlement on Port Phillip Bay. On 5 July 1804, Collins instructed that at least two of the Night Watch were to be on duty at night because of the number of robberies being committed. Collins disbanded the Watch two years later, recognising that it was necessary to have police able to carry out their duty in a proper manner. At Port Dalrymple, now Launceston, which was then separately administered, Lieutenant-Governor Paterson on 19 November 1804, appointed Thomas Massey as Chief Constable, with three subordinate constables.

Because allowances, which consisted only of rations, clothing and spirits, were not sufficient for the proper support of the first policemen, they were forced to find other means of supplementing their incomes. This led to the force being mediocre at best. Free settlers were not inclined to join the force because of the poor remuneration; recruits were mostly convicts on 'ticket of leave'.

In 1828, Governor Arthur, who had commented that 'there was no Branch of the Public Service more deficient than the Police', divided the State into nine districts, each with a police magistrate who was responsible to a chief police magistrate in Hobart. Writing about the 1820s in Hobart Town, J. E. Calder in an 1879 newspaper article said '... drunkenness was 10 times more prevalent than now, and street robbery, burglary and even murder were not rare...'.

Arthur's organisation remained until soon after the State graduated to responsible government in 1856. In 1857, the *Hobart Town and Launceston Police Act* made the two towns responsible for their police forces. Some other municipalities took control of their own police following the passing of the *Rural Municipalities Act* 1858, and, where there was no municipal police force, the Government provided police from a Territorial Force.

The nucleus of the present force was not created until 1898 when the first Commissioner was appointed, all police forces were amalgamated and municipal control terminated.

The Present Force

Organisation: The Police Department is headed by the Commissioner who is responsible to the Minister for Police. There are four administrative divisions, i.e. Southern, Northern, North-Western and Central, each under the control of a superintendent, and three branches, the Criminal Investigation Branch, the Training Branch and the Traffic Branch, each with a superintendent in charge.

Recruitment and Training: The Police Department operates two recruit training schemes. In 1971 the Department introduced a two-year scheme to train cadets from which recruits qualify as first-year constables at the age of nineteen. To qualify for the two-year course applicants, among other qualifications, must be aged between sixteen and seventeen years three months and hold Level II passes in School Certificate Mathematics and English. All other recruits undergo an intensive fourteen-week training course.

Officers must qualify by examination before promotion to each rank up to inspector. The Department has sponsored some officers' university courses and men are also sent to police colleges in Sydney and Melbourne.

Criminal Investigation: The Criminal Investigation Branch comprises approximately 130 police officers of whom about 100 are engaged in the active investigation of crime. The Branch also controls the Information Bureau (see *Fingerprinting* and *Laboratory* below) and communications.

Traffic Duties: The Department enforces the traffic regulations for the Transport Department. Traffic control occupies a large part of police time.

Search and Rescue: A search and rescue squad, based in Hobart, equipped for bush and sea search and rescue, cliff rescue, and resuscitation is ready to leave at short notice. The squad is supported by walking clubs and other people in various parts of the State.

Other Duties: Inspection of licensed premises, supervision of gaming, conducting special interviews and inquiries for government departments, and the service of notices and summonses are important police functions.

Radio: Radio is used extensively; since 1954 there has been a direct link-up with the continental States. An intrastate system operates between Hobart, Launceston, Burnie, Queenstown, Oatlands and Deloraine. Mobile radio is installed in all police vehicles and boats. 'Walkie-talkie' units were issued to policemen on the beat in Hobart and Launceston in 1971. A teleprinter allows direct contact with Interpol, an international police agency, and other States.

Fingerprinting: This is an important aid to criminal investigation. Each year some 2,000 sets of prints are received, checked with the Central Fingerprint Bureau in Sydney and classified. Over 100,000 sets are kept on file.

Laboratory: A modern laboratory equipped with a comparison microscope and other investigation facilities is used by Information Bureau experts for ballistic examination, inspection of documents, file marks, etc. and other evidence of criminal activity. Extensive use is made of photography.

Police Academy: In 1971 work started on the Department's new training academy at Rokeby, about ten miles from Hobart. The academy, to cost an estimated \$3,500,000, is scheduled for completion in 1973-74. Planned to house 120 cadets, the project comprises an instruction block, a residential block and four houses to accommodate senior staff. Among facilities which will be provided at the academy are a shooting range, armoury, drill square, library, theatre and cafeteria.

Strength of Force

The following table shows the number of police and expenditure:

Police Force: Number and Cost

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
Police Officers (a) no.	678	699	703	721	749
Persons Per Police Officer (a) no.	548	538	543	539	522
Cost (Total Expenditure of Police Department) \$'000	2,727	3,109	3,541	3,680	4,055
Cost Per Head of Mean Population \$	7.38	8.31	9.33	9.48	10.4

(a) At 30 June.

EMERGENCY SERVICES

Civil Defence

Introduction

In 1962, after discussions with the Commonwealth, the State Government agreed to establish a Tasmanian civil defence organisation as a part of an Australia-wide civil defence service, but it was decided to adapt the service to deal with natural disasters as well as war-time emergencies.

Structure

Responsibility for establishing the service was divided between Commonwealth, State and local governments. Local government authorities are responsible for: (i) appointing local controllers who have the task of raising and training volunteer forces; and (ii) sponsoring local volunteer groups. Participation by local government authorities is voluntary and at 1 July 1971, 40 municipalities had joined the scheme in Tasmania. Participating municipalities do not necessarily have to provide financial assistance but are expected to provide facilities for training purposes and storing equipment.

During peace-time, control of the State Civil Defence and Emergency Services is vested in the Chief Secretary as the Minister responsible for Emergency Services. The Director of Civil Defence and Emergency Services is responsible for the administration of the Service and for implementing government civil defence policy. In the case of war or attack by a foreign power, the Civil Defence Service may be given statutory powers. At a time of natural disaster, the organisation may be called into operation by a decision of State Cabinet or a request from a statutory authority responsible for emergency operations. The Commissioner of Police then assumes responsibility for the co-ordination of the emergency operations.

During 1970-71, municipal civil defence units assisted during flood emergencies in Kingborough, New Norfolk, Hamilton, Longford, Latrobe, Devonport and Kentish; search and rescue operations at Queenstown, Savage River, Bothwell and Launceston; and assistance with storm damage at Burnie. The State mobile headquarters unit was used for assistance with storm damage at Risdon Vale and for fire control duties at Strathgordon.

Administrative Structure

Civil Defence administration in Tasmania is organised on a four-level basis: (i) municipal divisions; (ii) regions; (iii) areas; and (iv) State headquarters. Each municipality constitutes a municipal division of which 35 are currently operational. The 'municipal divisions' are allocated on a geographical basis between nine 'regions' which in turn are attached to one of three 'areas'. At the apex of the structure is the State headquarters located in Hobart.

At present, regional commands are bypassed and a direct link exists between the 'area' and the 'municipal division'.

Each area is administered by a full-time area co-ordinating officer who assists volunteer municipal controllers in raising and training divisions.

Recruitment and Training

By July 1971, 1,493 persons had volunteered for service in the 40 municipal divisions. On enlistment, all volunteers are insured against death or injury while engaged in training or participating in emergency operations.

Training is mainly undertaken at the municipal level while instruction courses for controllers, staff officers, instructors and heads of services are conducted at the Australian Civil Defence School located at Mt Macedon, Victoria.

Equipment and Finance

Protective clothing and operational equipment for the units of the various services up to the value of \$20,000 per annum are provided by the Commonwealth Directorate of Civil Defence. State appropriation for civil defence expenditure during 1970-71 was \$47,675.

Fire Prevention and Fire Fighting

Introduction

The area of Tasmania is 26,383 sq. miles (the equivalent of a square with 162-mile sides). Seventy per cent of the State's population is, in Census terms, *urban*, i.e. living in cities or towns with 1,000 or more inhabitants. The responsibility for fire prevention and fire fighting in the cities and main towns rests with local fire brigades under the general control of a central body, the Fire Brigades Commission of Tasmania.

The balance of the State's population (30 per cent) is, again in census terms, *rural*, i.e. living in townships with less than 1,000 inhabitants or in isolated locations such as farms, milling and logging settlements, mining camps, etc. This rural population is spread over a large area and the type of fire brigade organisation appropriate to concentrated urban settlements cannot be employed; factors of distance, time and finance combine to demand a different mode of approach. The Tasmanian answer has been to set up local rural fire organisations and to co-ordinate their activities through a central body, the Rural Fires Board.

Following the disastrous bushfires of February 1967, the organisation of both types of fire-fighting body was closely examined and changes made with a view to securing better co-ordination and increased protection. The changes are described in the sections that follow.

A third relevant authority is the Forestry Commission which is responsible for the fire protection of State Forests and other forested Crown land; the Commission also fights fires on private land if they endanger forests on Crown land.

Fire Brigades Commission of Tasmania

The Commission, established under the *Fire Brigades Act* 1945 (as amended) is composed of two representatives of the Minister (the Chief Secretary), three representatives of insurance companies, one representative of city and municipal councils and one representative appointed by the Rural Fires Board. All urban brigades are under the control of a Chief Officer. The system of financing the fire brigades is shown below:

Fire Brigades: Principal Sources of Revenue, 1969-70

Contributions Received by Fire Brigades Commission	Receipts (\$)	Distribution Made by Fire Brigades Commission	Payments (\$)
From—		To—	
State Government	239,557	Fire Brigade Boards	1,059,520
City and Municipal Councils..	239,557		
Insurance Companies	580,406		
Total	1,059,520	Total	1,059,520

The number of contributing local government authorities in 1969-70 was 32, although the number of fire brigade boards was only 22 (some boards take responsibility for areas lying in more than one municipality, e.g. the Hobart Board with sub-stations in Glenorchy, Clarence, Kingborough and Sorell). The present contribution formula requires 55 per cent from the insurance companies, and 22½ per cent each from the Government and the local government authorities; the Commission prepares an annual estimate of expenditure so that the level of contributions may be fixed in advance. The loan debt of all fire brigade boards at 30 June 1970 was \$660,209.

At 30 June 1970, the 22 fire brigade boards maintained 36 stations (including sub-stations) and employed 221 permanent firemen (Hobart 130, Launceston 79, Burnie 6, Devonport 6); other firemen, numbering 419, were paid on a part-time basis. In addition, one Hobart sub-station, Fern Tree, situated in forested mountain country, had a volunteer strength of 40. Including the Fern Tree volunteers, the total firemen (officers and men) in the Brigades numbered 680.

Rural Fires Board

Following the fire disaster of February 1967, the Rural Fires Board was reorganised under the *Rural Fires Act* 1967 and became fully operative in July 1968.

The Act brought the separate urban and rural fire services and the State Civil Defence and Emergency Services together under the Chief Secretary. The Rural Fires Board operates under a chairman appointed by the Governor and consists of sixteen members representing: Forestry Commission (two members); Police; Fire Brigades Commission; pulp and paper making industry management; sawmilling industry management; Hydro Electric Commission; Fire and Accident Underwriters' Association; Tasmanian Farmers' Federation; Tasmanian Farmers', Stockowners' and Orchardists' Association; Australian Workers' Union; Timber Workers' Union; and Rural Fire Brigades.

Under the Act, the municipal councils, through fire permit officers approved by the Board, are made responsible for the control and issue of permits for fire use in restricted periods. Permit officers are not necessarily employees of the councils. Fire use is controlled during only two periods, that is, during *fire danger periods*, when permits are required, and on days of *acute fire danger* when no fires are permitted. These periods are introduced and removed as the seasonal conditions dictate in various parts of the State. The Act requires each municipal council to form a municipal fire committee for the purpose of promoting the formation of rural fire brigades and advising the Board and the council on matters of fire restriction, hazard reduction, the provision of funds for purchase of equipment to be used by rural fire brigades and any other

fire control matters. For approved equipment purchases for use by rural fire brigades, the Government may contribute a subsidy equal to the sum provided by the municipal council. Areas with particular fire problems and sparse population may be declared as *special fire areas* and be the subject of separate schemes sponsored entirely from Government finance.

The Board has a paid staff of fifteen, headed by the State Fire Control Officer and includes five Regional Fire Officers. There were 276 rural fire brigades at June 1971. These brigades are composed entirely of registered volunteers, involving 6,514 people. The Board's budget in 1970-71 was \$444,388 comprising: \$162,750 for administrative and field operational expenditure; \$140,000 for fire fighting vehicles, radio communications and other equipment; \$84,000 for development of *special fire areas*; and \$57,500 for fire fighting equipment, hazard clearing and other work in Hobart special fire area. Half the administrative expenditure of the Board is met by insurance companies insuring rural properties, and half by the Government. Special fire area expenditure is borne by the Government, with remaining expenditure being shared proportionately between the Government and municipalities.

Forestry Commission

The Commission is responsible for the protection of the 2.67m acres of State Forests and of other forested Crown land. Close liaison is maintained with the Rural Fires Board as two members of the sixteen-man Board are representatives from the Forestry Commission.

In its role as a fire prevention authority the Commission fought 118 fires at a cost of \$21,962 during 1969-70. A total area of 13,050 acres of State forest and Crown land was burnt, of which about 70 per cent was scrub or waste land.

The following table gives details, for ten years, of the areas burnt within fire perimeters, the number of fires fought and the cost of suppression.

Comparisons of Seasonal Fire Damage

Year	Area Burnt (a)	Fires	Suppres- sion Cost	Year	Area Burnt (a)	Fires	Suppres- sion Cost
	acres	no.	\$		acres	no.	\$
1960-61 ..	434,644	479	252,346	1965-66 ..	129,147	317	54,968
1961-62 ..	27,904	137	21,316	1966-67 ..	426,219	264	108,018
1962-63 ..	21,680	126	17,918	1967-68 ..	95,705	230	61,032
1963-64 ..	66,518	252	74,012	1968-69 ..	11,205	87	18,722
1964-65 ..	11,815	146	33,930	1969-70 ..	15,372	118	21,963

(a) Including private property inside the perimeter of fires on which suppressive action was taken.

Chapter 13

LABOUR, WAGES AND PRICES

EMPLOYMENT

Historical

Tasmanian records for the first ninety years give no dissection of the population such that the total number of wage and salary earners can be accurately ascertained. The first census to provide the necessary analysis was that of 1891, the categories used on that occasion and in subsequent censuses being broadly comparable. The composition of the labour force is shown in the following table for each census from 1901 to 1961:

Elements of Labour Force in Censuses of 1901-1961

Census Year	Employer	Self-Employed	Employee	Helper not Receiving Wage or Salary	'Not at Work' (a)	Total in Labour Force	Total Population
1901—Males ..	6,213	9,100	36,063	4,098	1,810	57,284	89,624
Females	462	2,434	10,229	2,071	356	15,552	82,851
Persons	6,675	11,534	46,292	6,169	2,166	72,836	172,475
1911—Males ..	8,477	6,742	40,555	3,916	1,492	61,182	97,591
Females	642	1,249	10,715	411	326	13,343	93,620
Persons	9,119	7,991	51,270	4,327	1,818	74,525	191,211
1921—Males ..	4,445	13,309	42,763	1,875	3,606	65,998	107,743
Females	347	1,593	11,484	67	510	14,001	106,037
Persons	4,792	14,902	54,247	1,942	4,116	79,999	213,780
1933—Males ..	7,277	11,887	38,084	1,752	10,226	69,226	115,097
Females	798	1,423	13,082	116	1,442	16,861	112,502
Persons	8,075	13,310	51,166	1,868	11,668	86,087	227,599
1947—Males ..	6,718	12,522	58,097	997	1,867	80,201	129,244
Females	659	1,198	17,693	86	481	20,117	127,834
Persons	7,377	13,720	75,790	1,083	2,348	100,318	257,078
1954—Males ..	6,886	12,616	72,481	778	1,215	93,976	157,129
Females	788	1,329	21,590	246	279	24,232	151,623
Persons	7,674	13,945	94,071	1,024	1,494	118,208	308,752
1961—Males ..	7,108	11,619	78,863	505	3,194	101,289	177,628
Females	1,113	1,572	25,853	194	896	29,628	172,712
Persons	8,221	13,191	104,716	699	4,090	130,917	350,340

(a) Includes those who stated they were usually engaged in work, but were not actively seeking a job at the time of the census by reason of sickness, accident, etc., or because they were on strike, changing jobs, temporarily laid off, etc. It also includes persons able and willing to work, but unable to secure employment, as well as casual and seasonal workers not actively engaged in a job at the time of a census.

Labour Force and Employment

It is essential to distinguish between 'labour force' and 'employees' since *employment* statistics in this chapter relate mainly to wage and salary earners, who are, however, *only one component of the labour force* which also comprises employers, self-employed persons, unpaid helpers and unemployed persons. The category 'not at work' shown in the preceding table was first established in the 1947 Census and the comparison with earlier years is approximate only. For further details, see subsequent section headed 'Unemployment'. Data from the 1966 Census (shown in the next section) could not be included in the table because of a new method of collecting information in that year.

Labour Force, 1966 Census

In the 1966 Census, a new set of questions (based on activity in the week before the Census) was asked to establish who should be included in the labour force. The composition was as follows:

Elements of Tasmanian Labour Force, 1966 Census

Sex	Employer	Self-Employed	Employee	Unpaid Helper	Un-employed	Total in Labour Force	Total Population
Males	8,245	9,162	87,572	432	1,146	106,557	187,390
Females	1,759	1,644	35,451	940	971	40,765	184,045
Persons	10,004	10,806	123,023	1,372	2,117	147,322	371,435

The essential difference between the pre-1966 approach to labour force and the 1966 approach was that in pre-1966 censuses, people were invited to classify themselves (e.g. as unemployed, employee, etc.), while in the 1966 Census, people were invited to describe their *activity* in a specific week and the Statistician, using pre-determined definitions, classified them on the basis of their answers.

Briefly, the new questions asked whether the person: (i) Had a job or business of any kind last week (even if temporarily absent from it); (ii) Did any work at all last week for payment or profit (Unpaid helpers who worked were to answer *yes.*); (iii) Was temporarily laid off by his employer without pay for the whole of last week; and (iv) Looked for work last week. (Ways of 'looking for work' were specified on the Census form.)

The 1966 labour force includes all persons answering *yes* to any one of these four questions. The effect of the new definition is to include additional persons in the labour force. This applies particularly to those working part-time (sometimes for only a few hours a week), some of whom in 1961 may not have considered themselves as '... engaged in an industry, business, profession, trade or service'. The main difference in classification between the 1901-1961 table and the 1966 table is the substitution of the category 'unemployed' for the former category 'not at work'.

The total of persons recorded as unemployed in 1966 was compiled from persons answering *no* to questions (i), (ii) and (iii) and *yes* to question (iv).

Monthly Series of Employment Statistics

In this chapter, employment details are shown as from June 1966. The series is based on comprehensive data (referred to as 'benchmarks') derived from the Census of June 1966. Figures for the period subsequent to the Census of 1966 are estimated from three main sources, namely: (i) current pay-roll

tax returns; (ii) current returns from government bodies; and (iii) some other direct current records of employment (e.g. for hospitals), supplemented by estimates of the change in the number of wage and salary earners not covered by the foregoing collections.

The benchmark figures are derived from particulars recorded for individuals on population census schedules, whereas the estimated monthly figures are derived mainly from reports supplied by employers relating to enterprises or establishments. These two sources differ, in some cases, in scope and in reporting of industry; however, the industry dissection of the benchmark total has been adjusted, as nearly as may be, to an enterprise or establishment reporting basis. The industry classification used throughout the series is that of the Census of June 1966.

Pay-roll tax returns are lodged at present by all employers paying more than \$400 a week in wages (other than certain Commonwealth Government bodies, religious and benevolent institutions, public hospitals and other similar organisations specifically exempted under the *Pay-roll Tax Assessment Act 1941-1970*). At 30 June 1954 this Act required employers paying wages of more than \$160 a week to lodge returns. The exemption limit was raised to \$240 a week from 1 September 1954 and to the present level of \$400 a week as from 1 September 1957.

The passing of control of pay-roll tax in June 1971 from the Commonwealth to the States did not affect the production of the wage and salary earners employment series.

It should be noted that employees in rural industry and in private domestic service are not included in the estimates because of the inadequacy of current data. The terms 'Employment', 'Number Employed', 'Employees' and 'Wage Earners' used throughout are synonymous with, and relate to, 'Wage and Salary Earners' on pay-rolls or in employment in the latter part of each month, as distinct from numbers of employees actually working on a specific date. They include some persons working part-time.

Figures for current months are subject to revision. As they become available, particulars of employment obtained from other Bureau collections are used to check and, where necessary, to revise estimates in relevant sections.

The table below gives estimated totals for employees in Tasmania at June and December of each year:

**Wage and Salary Earners in Civilian Employment, June and December
(Excluding Employees in Agriculture and Private
Domestic Service, and Defence Forces)
(^{'000})**

Year	June			December		
	Males	Females	Persons	Males	Females	Persons
1966	81.6	33.8	115.4	82.9	35.0	117.9
1967	83.2	35.5	118.7	84.3	36.2	120.5
1968	84.7	37.1	121.8	86.4	37.8	124.2
1969	86.5	38.1	124.6	88.0	39.4	127.4
1970	88.5	39.3	127.8	88.9	40.8	129.7
1971	89.1	40.5	129.6			

The detailed study of employment trends requires examination of monthly figures, so the next table has been compiled to show totals of employees for each month:

**Wage and Salary Earners in Civilian Employment, Monthly Estimates
(Excluding Employees in Agriculture and Private
Domestic Service, and Defence Forces)
(’000)**

Month	Males			Females			Persons		
	1968	1969	1970	1968	1969	1970	1968	1969	1970
January ..	84.8	86.3	88.3	36.0	36.7	38.6	120.8	123.0	126.9
February ..	84.9	86.3	88.3	36.5	37.0	38.8	121.4	123.3	127.1
March ..	84.7	86.4	88.9	37.2	37.8	39.1	121.9	124.2	128.0
April ...	85.0	86.6	89.2	37.3	38.2	39.6	122.3	124.8	128.8
May ..	85.1	86.6	88.9	37.3	38.2	39.6	122.4	124.8	128.5
June ..	84.7	86.5	88.5	37.1	38.1	39.3	121.8	124.6	127.8
July ..	84.4	86.2	88.2	36.8	37.8	39.2	121.2	124.0	127.4
August ..	84.5	86.0	88.2	36.5	37.8	39.1	121.0	123.8	127.3
September ..	84.6	86.2	88.0	36.6	38.0	39.0	121.2	124.2	127.0
October ..	84.7	86.5	87.9	36.6	38.1	39.2	121.3	124.6	127.1
November ..	84.9	87.2	88.0	36.8	38.4	39.5	121.7	125.6	127.5
December ..	86.4	88.0	88.9	37.8	39.4	40.8	124.2	127.4	129.7

Civilian Employees of Government Bodies

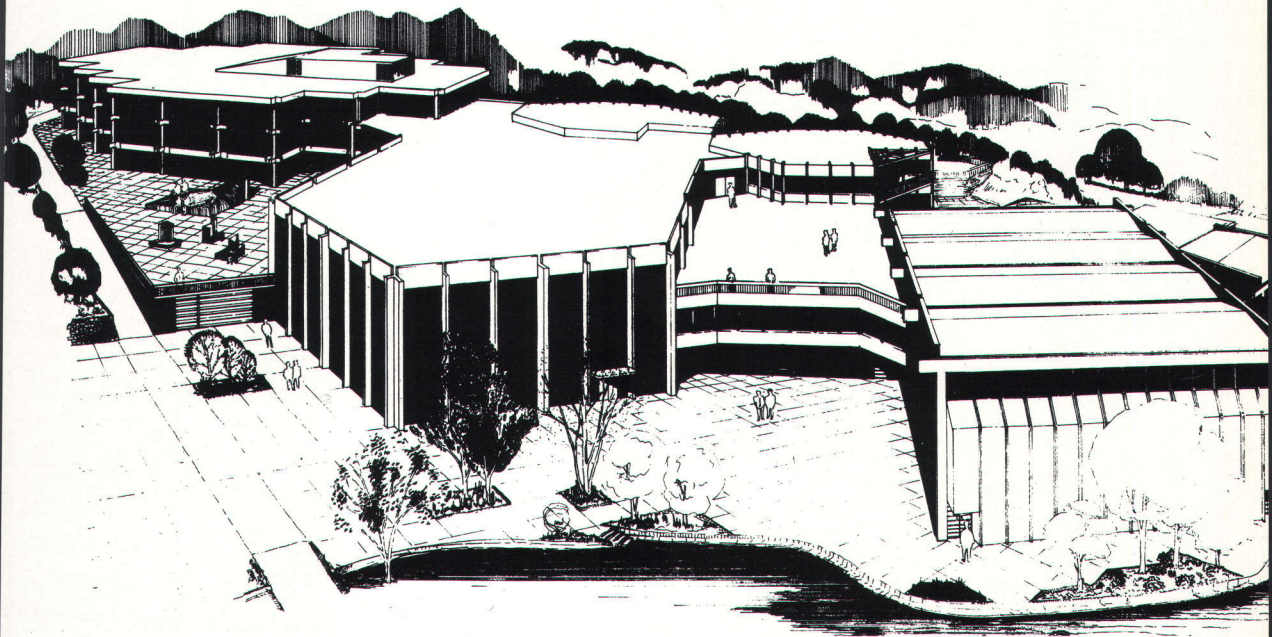
In Tasmania, as in other Australian States, a relatively high proportion of wage and salary earners is employed by government bodies operating at four levels: Commonwealth, State, Local and Semi-Government (with the complication that semi-government authorities may have been created by either the Commonwealth or the State). For the purposes of these statistics, government employees include persons working on government services such as railways, tramways, banks, post offices, power and light, air transport, education (including universities), broadcasting, television, police, public works, government factories, departmental hospitals and institutions, etc., as well as those engaged in administrative services.

The following table shows the number of government employees in Tasmania according to the level of government:

**Civilian Employees of Government Bodies at 30 June
(’000)**

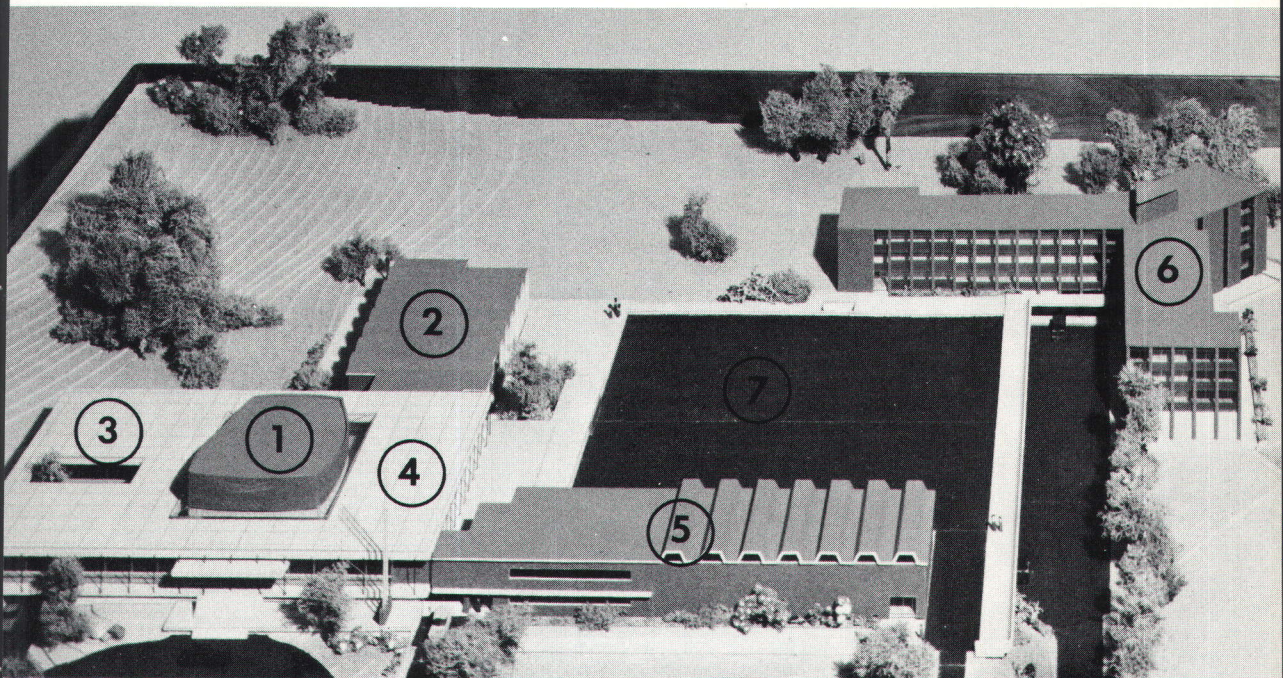
Year and Sex	Level of Government			Total
	Commonwealth (a)	State (a)	Local	
1969—Males ..	5.1	18.6	2.3	26.0
Females ..	1.7	6.4	0.3	8.4
Persons	6.7	25.1	2.6	34.4
1970—Males ..	5.2	18.7	2.4	26.3
Females ..	1.7	6.7	0.4	8.7
Persons	6.8	25.4	2.8	35.0
1971—Males ..	5.2	18.4	2.4	26.1
Females ..	1.7	7.0	0.3	9.0
Persons	6.9	25.4	2.8	35.1

(a) Includes semi-government bodies.



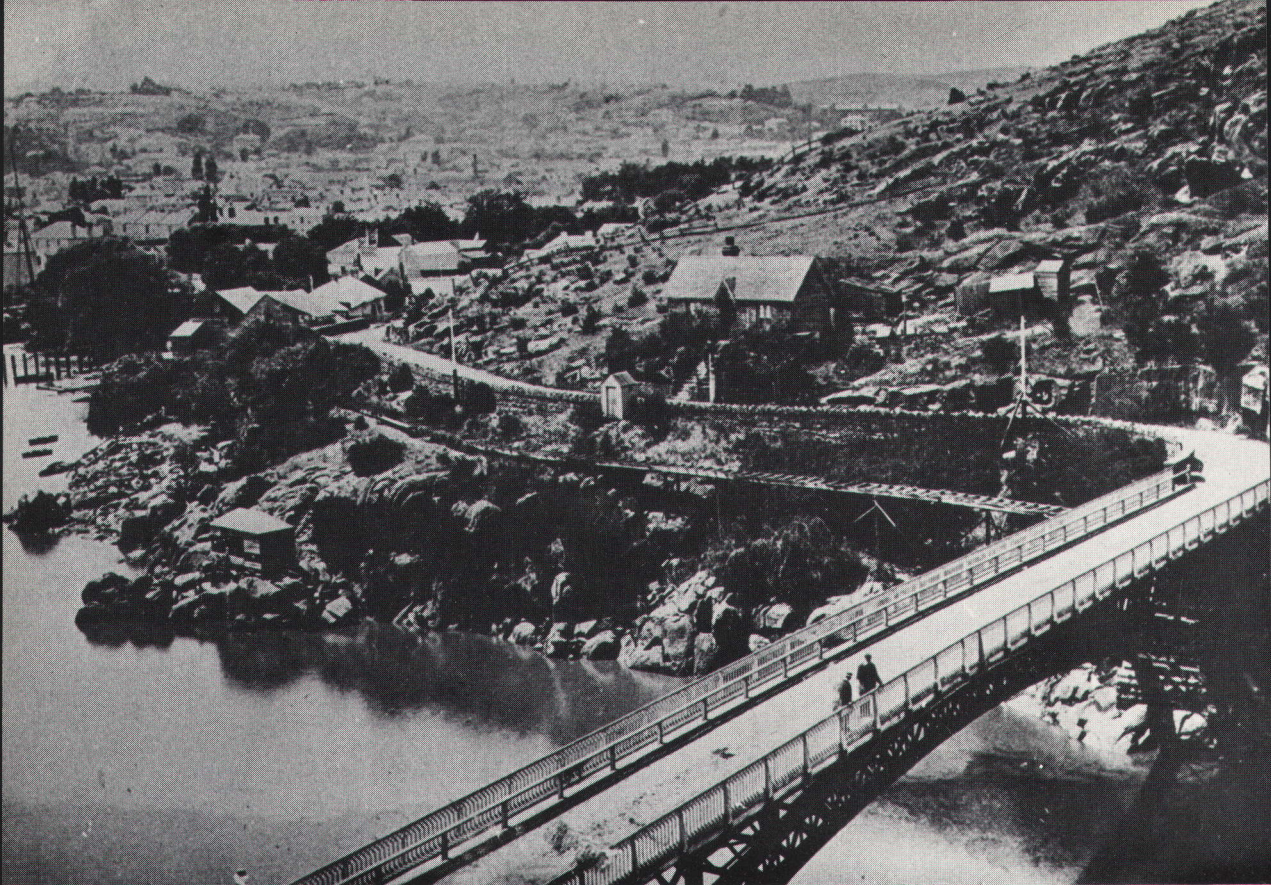
Artist's impression of the proposed Alanvale Matriculation College, Launceston

(Education Dept)



Model of the Police Training Academy showing: (1) Theatrette; (2) Classrooms; (3) Administrative Block; (4) Cafeteria; (5) Activities Hall; (6) Accommodation Block; (7) Parade Ground

(Police Dept)

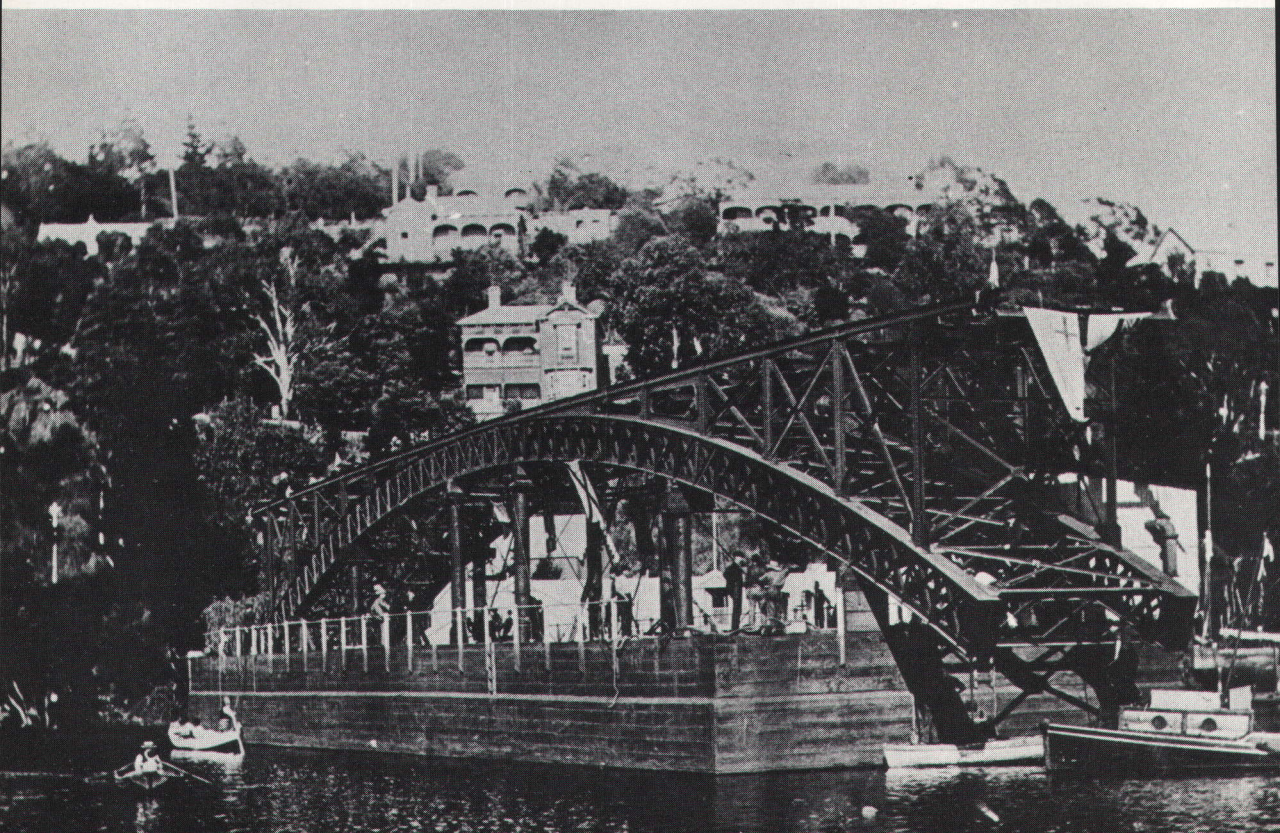


The original Gorge Bridge, with Launceston in the background, September 1867

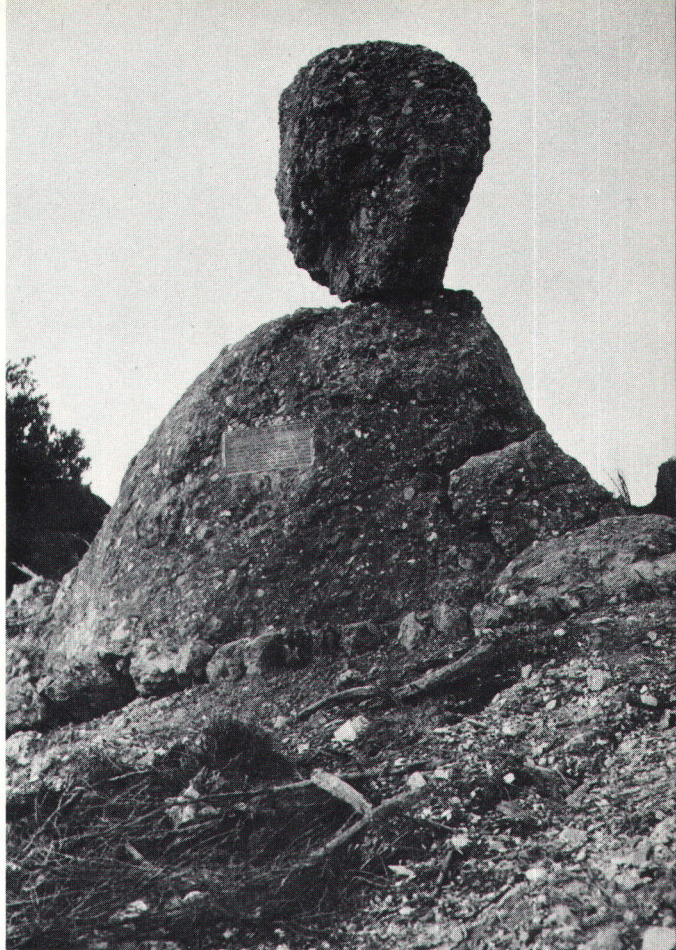
(P.W.D.)

Construction of the Gorge Bridge duplication, 1904

(P.W.D.)



*Balanced erratic, Henty Moraine Scenic Reserve, near
Queenstown*



Runnymede, New Town

(Dept of Film Production)





Constitution Dock with the new Hobart Marine Board (left) and H.E.C. buildings

(Don Stephens)

The next table shows employees according to private and government sectors:

Total Civilian Employees of Private Employers and Government Bodies at 30 June ('000)

Year	Males Employed By		Females Employed By		Persons Employed By	
	Private Employers	Govt Bodies	Private Employers	Govt Bodies	Private Employers	Govt Bodies
1967	57.9	25.3	27.4	8.1	85.2	33.4
1968	58.8	25.9	28.6	8.5	87.4	34.4
1969	60.5	26.0	29.7	8.4	90.2	34.4
1970	62.2	26.3	30.6	8.7	92.8	35.0
1971	63.0	26.1	31.5	9.0	94.5	35.1

Industrial Classification of Employees

In the following table, wage and salary earners in civilian employment are classified according to industry:

**Wage and Salary Earners in Civilian Employment: Industry Groups and Sub-Groups, June 1971
(Excluding Employees in Agriculture and Private Domestic Service, and Defence Forces)
('000)**

Industry Group and Sub-Group						Males	Females	Persons
Forestry, Fishing and Hunting .. ..	..	..	..	..	..	1.0	0.1	1.1
Mining and Quarrying .. ..	..	..	..	..	..	4.8	0.2	5.0
Manufacturing .. ..	..	..	..	..	..	28.2	6.9	35.2
Electricity, Gas, Water and Sanitary Services .. ..	..	..	..	..	..	3.8	0.3	4.2
Building and Construction .. ..	..	..	..	..	..	11.4	0.3	11.7
Transport and Storage—								
Road Transport and Storage .. ..	..	..	..	..	..	3.1	0.3	3.4
Shipping and Stevedoring .. ..	..	..	..	..	..	1.9	0.1	2.0
Rail and Air Transport .. ..	..	..	..	..	..	1.9	0.2	2.0
Total .. ..	..	..	..	..	..	6.9	0.5	7.4
Communication .. ..	..	..	..	..	..	2.9	0.9	3.8
Finance and Property—								
Banking .. ..	..	..	..	..	..	1.5	0.9	2.4
Other .. ..	..	..	..	..	..	1.7	1.3	3.0
Total .. ..	..	..	..	..	..	3.2	2.2	5.3
Commerce—								
Retail Trade .. ..	..	..	..	..	..	6.0	6.9	13.0
Wholesale and Other Commerce .. ..	..	..	..	..	..	5.6	1.5	7.1
Total .. ..	..	..	..	..	..	11.6	8.4	20.1
Public Authority Activities (n.e.i.) .. ..	..	..	..	..	..	4.2	1.9	6.0
Other Industries—								
Health, Hospitals, etc. .. ..	..	..	..	..	..	1.8	6.3	8.1
Education .. ..	..	..	..	..	..	3.1	4.8	7.9
Amusement, Hotels, Personal Service, etc. .. ..	..	..	..	..	..	3.4	5.4	8.8
Other (a) .. ..	..	..	..	..	..	2.8	2.1	4.9
Total .. ..	..	..	..	..	..	11.1	18.6	29.7
Grand Total .. ..	..	..	..	..	..	89.1	40.5	129.6

(a) Comprises Law, Order and Public Safety, Religion and Social Welfare; Other Community and Business Services.

The analysis of wage and salary earners by industry groups clearly indicates 'manufacturing' as the predominant activity. As employees in agriculture are excluded from the series, it is not possible to compare employment in primary, secondary and tertiary industries on the basis of the data appearing in the table. ('Employment on Rural Holdings' is described in Chapter 6 but the seasonal character of this work makes it difficult to estimate the level of rural employment in any given month.) Attention is drawn to the relatively minor level of employment in 'Public Authority Activities (n.e.i.)'; the civilian employees of government bodies shown in a previous table have been classified according to their appropriate industry group (e.g. transport, communication, health, education, etc.) and only those not included in a specified group appear in this item.

Industrial Classification of the Labour Force and of Employees

The Census of 30 June 1966 provides an analysis of the total labour force (including those engaged in rural industry); the percentage in each broad category was as follows: *primary production* (fishing, hunting, rural industries, forestry), 11.69; *mining and quarrying*, 2.29; *manufacturing*, 23.05; *electricity, gas water and sanitary services*, 2.72; *building and construction*, 9.70; *transport and storage*, 6.01; *communication*, 2.64; *finance and property*, 3.10; *commerce* (wholesale and retail), 15.59; *public authority (n.e.i.) and defence services*, 3.73; *community and business services (including professional)* (e.g. schools, hospitals, etc.), 11.87; *amusement, hotels and other accommodation, cafes, personal service, etc.*, 5.62; *industry not stated*, 1.99; *total*, 100.00.

As previously explained, wage and salary earners are only one part of the labour force but the analysis in the previous paragraph indicates the importance of tertiary industry in today's community. If the *primary* group is combined with *mining and quarrying*, only fourteen per cent of the labour force was engaged in the extraction of raw materials; a further 23 per cent was engaged in manufacturing. In other words, less than 40 per cent of the labour force was engaged in primary and secondary industries as defined for statistical purposes.

The next table specifies the main industrial groups and shows the industrial classification of *civilian employees* at annual intervals:

Wage and Salary Earners in Civilian Employment: Main Industry Groups
(Excluding Employees in Agriculture and Private Domestic Service, and Defence Forces)
(000)

As at 30 June	Mining and Quarrying	Manufacturing (a)	Building and Construction	Transport, Storage and Communication	Retail Trade	Wholesale Trade, etc; Finance, Property	Public Authority (n.e.i.); Community Services, etc. (b)	Amusement, Hotels, Personal Service, etc.
MALES								
1967	3.3	26.9	12.1	9.8	5.7	8.2	10.2	2.4
1968	3.9	27.4	11.6	9.9	6.0	8.3	10.5	2.6
1969	4.2	27.8	11.8	9.9	6.0	8.4	10.9	2.7
1970	4.4	28.3	12.2	9.9	6.0	8.4	11.3	3.1
1971	4.8	28.2	11.4	9.8	6.0	8.8	11.9	3.4

Wage and Salary Earners in Civilian Employment: Main Industry Groups
(Excluding Employees in Agriculture and Private Domestic Service, and Defence Forces)—continued
 ('000)

As at 30 June	Mining and Quarrying	Manufac- turing (a)	Building and Construct- ion	Trans- port, Storage and Communi- cation	Retail Trade	Wholesale Trade, etc; Finance, Property	Public Authority (n.e.i.); Communi- ty Services, etc. (b)	Amuse- ment, Hotels, Personal Service, etc.
FEMALES								
1967	0.1	7.0	0.3	1.5	6.5	3.1	12.9	3.8
1968	0.2	7.0	0.3	1.5	6.7	3.3	13.7	4.1
1969	0.2	7.1	0.3	1.5	6.8	3.4	14.0	4.5
1970	0.2	7.3	0.3	1.5	6.7	3.4	14.5	5.0
1971	0.2	6.9	0.3	1.4	6.9	3.7	15.1	5.4
PERSONS								
1967	3.4	33.9	12.4	11.3	12.2	11.3	23.1	6.2
1968	4.1	34.4	11.9	11.4	12.7	11.6	24.2	6.7
1969	4.4	34.9	12.1	11.4	12.8	11.8	24.9	7.2
1970	4.6	35.6	12.5	11.2	12.7	12.0	25.9	8.0
1971	5.0	35.2	11.7	11.2	13.0	12.4	26.9	8.8

(a) Includes employees engaged in selling and distribution, etc. as well as those occupied directly in manufacturing activities.

(b) Includes Law and Order, Religion and Social Welfare, Health Services, Education and Other Community and Business Services.

UNEMPLOYMENT

Historical

The total of persons 'unemployed' has been recorded by the Bureau of Census and Statistics at the dates of successive population censuses. The measurement of unemployment is complicated by definitional problems since persons normally in the labour force, but not having a job at the time of a census, may be in this position for reasons other than those associated with scarcity of employment. The following table records data from the Censuses of 1921 and 1933:

Labour Force and Unemployment, Censuses of 1921 and 1933

Particulars	Census, 4 April 1921			Census, 30 June 1933		
	Males	Females	Persons	Males	Females	Persons
Labour Force (a) ..	65,998	14,001	79,999	69,226	16,861	86,087
'Unemployed' ..	3,606	510	4,116	10,226	1,442	(b)11,668
'Unemployed' as Per- centage of Labour Force	5.5	3.6	5.1	14.8	8.6	13.6

(a) Comprises employers, self-employed, employees, helpers and unemployed.

(b) Excludes 4,944 persons (4,193 males) employed part-time, including those on sustenance or relief work. Such persons were classified as employees.

Those describing themselves as unemployed were further invited to state the cause. The result from the Census of 1933 is quoted below:

Causes of Unemployment, Census of 30 June 1933

Cause of Unemployment	Number			Proportion of Total (Per Cent)		
	Males	Females	Persons	Males	Females	Persons
Scarcity of Employment	8,883	1,002	9,885	86.9	69.5	84.7
All Other Causes (a)	1,343	440	1,783	13.1	30.5	15.3
Total	10,226	1,442	11,668	100.0	100.0	100.0

(a) Includes sickness, accident, industrial dispute, voluntarily idle and cause not stated.

From the 1947 Census onwards, the enquiry was broadened to include all persons (usually engaged in industry, business, trade, profession or service) who were out of a job and 'not at work' at the time of the census for whatever reason, including reasons not normally associated with unemployment.

'Not at Work'

In the next table, a summary is made of data from the Censuses of 1947, 1954 and 1961, the principal comparison being the respective levels of the labour force and of those classified as 'Not at Work'.

As previously defined, 'Not at Work' includes those who stated that they were usually engaged in work but were not actively seeking a job at the time of the census by reason of sickness, accident, etc. or because they were on strike, changing jobs or temporarily laid off, etc. It includes also persons able and willing to work but unable to secure employment, as well as casual and seasonal workers not actually in a job at the time of the census. The numbers shown as 'Not at Work', therefore, do not represent the number of unemployed available for work and unable to obtain it.

The term 'Not at Work' does not apply to those who had a job but happened to be absent from it at census date due to sickness or leave.

**Labour Force and Persons 'Not at Work'
Censuses of 30 June 1947, 1954 and 1961**

Year and Sex	Labour Force (a)	Persons 'Not at Work'	
		Number	Proportion of Labour Force (Per Cent)
1947—Males ..	80,201	1,867	2.3
Females ..	20,117	481	2.4
Persons ..	100,318	2,348	2.3
1954—Males ..	93,976	1,215	1.3
Females ..	24,232	279	1.2
Persons ..	118,208	1,494	1.3
1961—Males ..	101,289	3,194	3.2
Females ..	29,628	896	3.0
Persons ..	130,917	4,090	3.1

(a) Comprises employers, self-employed, employees, helpers and those 'Not at Work'.

'Unemployed' (1966)

In the 1966 Census, the following new question was asked: Did the person look for work last week? Answer *yes* or *no*. (*Note: 'Looking for work' means: (i) being registered with the Commonwealth Employment Service; or (ii) approaching prospective employers; or (iii) placing or answering advertisements; or (iv) writing letters of application; or (v) awaiting the result of recent applications.*)

After the exclusion of persons who were already employed, but who were seeking alternative employment, the following data were obtained from this new approach:

Labour Force and Unemployed Persons, 1966 Census

Sex	Labour Force	Unemployed	
		Number	Proportion of Labour Force (Per Cent)
Males	106,557	1,146	1.1
Females	40,765	971	2.4
Persons	147,322	2,117	1.4

It should be noted that 'Not at Work' in the 1947-1961 table is different in concept from the 'Unemployed' category in the 1966 table.

Registrations With Commonwealth Employment Service

The Commonwealth Employment Service (C.E.S.) was established by Federal legislation under Section 47 of the *Re-establishment and Employment Act* 1945, and under the *Social Services Legislation Declaratory Act* 1947. The principal function of this service is to provide facilities in relation to employment for the benefit of persons seeking to change or obtain employment, or seeking to engage labour, and to provide facilities to assist in bringing about a high and stable level of employment throughout the Commonwealth.

The C.E.S. functions within the Employment Division of the Department of Labour and National Service on a decentralised basis. The central office is in Melbourne; there is a regional office in Hobart with district employment offices in Hobart, Launceston, Glenorchy, Devonport and Burnie, and agencies at Smithton and Huonville.

All applicants for unemployment benefits provided under the Commonwealth *Social Services Act* 1947-1969 must register at a district employment office or agency of the C.E.S. which is responsible for certifying whether or not suitable employment is available. Claims for unemployment benefits are paid by the Department of Social Services; country residents remote from an employment office or agency may claim by mail.

The establishment of the C.E.S. created two new methods of measuring fluctuations in unemployment:

- (i) the number of persons registered for employment with the C.E.S. at the end of each month; and
- (ii) the number of persons receiving unemployment benefit from the Department of Social Services at the end of each month.

'Registered for Employment'

In the following table, the persons shown are those who claimed, when registering with the C.E.S., *that they were not employed* and who were recorded on the last Friday in the month as unplaced. The count includes those referred to employers and those who may have obtained employment without notifying the C.E.S.; persons receiving unemployment benefit are included.

**Persons Registered for Employment With Commonwealth Employment Service
At June and December of Each Year (a)**

Year	On Register, June			On Register, December		
	Males	Females	Persons	Males	Females	Persons
1961	2,328	885	3,213	3,136	2,150	5,286
1962	2,476	1,133	3,609	2,956	2,356	5,312
1963	2,112	1,315	3,427	2,713	2,210	4,923
1964	1,812	1,156	2,968	1,860	1,598	3,458
1965	1,260	975	2,235	1,426	1,350	2,776
1966	849	846	1,695	1,447	1,260	2,707
1967	1,157	959	2,116	1,716	1,348	3,064
1968	1,145	943	2,088	1,786	1,314	3,100
1969	1,305	815	2,120	1,863	1,612	3,475
1970	1,160	728	1,888	1,791	1,376	3,167
1971	1,726	956	2,682	2,786	1,745	4,532

(a) Recorded as unplaced on the Friday nearest the last day of the month.

In interpreting the level of registration, account should be taken of the fact that registration is a *voluntary act*. Thus, while an increase in registrations may normally be taken to indicate an increase in unemployment, theoretically at least, it could merely indicate wider use of the facilities offered by the C.E.S.

The table that follows has been compiled to show the number registered for employment at the end of each month. The monthly figures are subject to pronounced seasonal influences, the most obvious being the effect of school-leavers on registrations in December and January.

**Persons Registered for Employment With Commonwealth Employment Service
At End of Each Month (a)**

Month	1969			1970			1971		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
January ..	1,934	1,405	3,339	2,047	1,518	3,565	1,630	1,261	2,891
February ..	1,397	1,231	2,628	1,626	1,475	3,101	1,318	1,151	2,469
March ..	1,057	1,103	2,160	843	1,031	1,874	1,013	949	1,962
April ..	1,092	865	1,957	839	729	1,568	1,195	983	2,178
May ..	1,247	809	2,056	919	678	1,597	1,366	1,028	2,394
June ..	1,305	815	2,120	1,160	728	1,888	1,726	956	2,682
July ..	1,407	821	2,228	1,194	702	1,896	1,750	937	2,687
August ..	1,388	782	2,170	1,142	662	1,804	1,825	831	2,656
September ..	1,326	775	2,101	1,209	761	1,970	2,038	838	2,876
October ..	1,041	761	1,802	1,101	753	1,854	1,905	788	2,693
November ..	922	816	1,739	996	781	1,777	1,709	868	2,577
December ..	1,863	1,612	3,475	1,791	1,376	3,167	2,786	1,746	4,532

(a) At Friday nearest last day of month.

Persons Receiving Unemployment Benefit

It is possible for a person to register as unemployed but make no claim for unemployment benefit. On the other hand, a person claiming unemployment benefit is required to register for employment. The next table gives details of persons receiving unemployment benefit each month:

Monthly Number of Persons Receiving Unemployment Benefit (a)

Month	1964	1965	1966	1967	1968	1969	1970	1971
January ..	1,191	876	404	452	536	648	634	518
February ..	1,159	828	312	388	474	543	568	502
March ..	885	542	217	334	361	332	404	347
April ..	907	538	219	315	396	410	349	405
May ..	1,171	728	311	380	456	499	348	574
June ..	1,399	926	433	526	635	600	437	782
July ..	1,702	937	512	597	642	714	544	957
August ..	1,732	813	494	620	667	681	561	1,062
September ..	1,595	763	470	533	615	628	540	1,165
October ..	1,395	557	453	419	565	481	473	1,215
November ..	1,115	484	404	432	575	544	410	1,148
December ..	1,060	465	434	536	658	621	517	1,399

(a) Number at the last Saturday of month. Source: Department of Social Services.

The number of males and females in receipt of unemployment benefit is shown for June of each year:

Persons Receiving Unemployment Benefit At June (a)

Particulars	1964	1965	1966	1967	1968	1969	1970	1971
Males ..	905	517	224	325	334	381	290	531
Females ..	494	409	209	201	301	219	147	251
Persons ..	1,399	926	433	526	635	600	437	782

(a) Number at the last Saturday of June in each year. Source: Department of Social Services.

Comparison of Unemployment Data

The following table shows those classified as 'Not at Work' at the Census of 1961, those unemployed at the Census of 1966 and also other measures of unemployment:

Unemployed Persons, Persons Registered for Employment and Persons Receiving Unemployment Benefit at 30 June 1961 and 1966

Particulars	1961			1966		
	Males	Females	Persons	Males	Females	Persons
CENSUS OF 30 JUNE						
Unable to Secure Employment (a)	2,085	507	2,592	1,146	971	2,117
Temporarily Laid Off ..	376	81	457	n.a.	n.a.	n.a.
Illness ..	398	156	554			
Accident ..	106	10	116			
Industrial Dispute ..	4	1	5			
Other ..	225	141	366			
Total 'Not at Work' ..	3,194	896	4,090	n.a.	n.a.	n.a.

**Unemployed Persons, Persons Registered for Employment and
Persons Receiving Unemployment Benefit at 30 June 1961 and 1966—continued**

Particulars	1961			1966		
	Males	Females	Persons	Males	Females	Persons
DEPARTMENT OF LABOUR AND NATIONAL SERVICE						
Registered for Employment (b) ..	2,328	885	3,213	849	846	1,695
DEPARTMENT OF SOCIAL SERVICES						
Receiving Unemployment Benefit (c)	1,060	276	1,336	224	209	433

(a) Figures for 1966 correspond with 'unemployed'.

(b) At Friday nearest last day of June.

(c) At last Saturday of June.

The comparison for 1954 was as follows: (i) 'unable to secure employment' (Census): males, 329; females, 74; persons, 403; (ii) 'registered for employment': males, 438; females, 117; persons, 555; (iii) 'receiving unemployment benefit': males, 96; females, 13; persons, 109.

INDUSTRIAL LEGISLATION AND CONDITIONS

Apprenticeship

Apprenticeship Commission

The Apprenticeship Commission was set up under the *Apprentices Act* 1942 to: (i) encourage, regulate and control training in proclaimed trades; (ii) assist youths towards successful trade courses; and (iii) provide properly trained craftsmen for industry. The Commission, which meets each month, consists of three representatives of trade unions, three of employers' organisations, a government nominee and the President, all members being appointed for a three-year term. To keep the Commission up-to-date with the latest developments, Trade Advisory Committees have been formed for particular industries, with both employers and employees represented.

Apprentices are trained at work and at technical classes, and supervisors report on the effectiveness of the training; supervisors also give on-the-spot advice to employers and apprentices where their mutual obligations are concerned and refer matters that cannot be settled in this way to the Commission for decision.

Apprenticeships: An apprenticeship may not be commenced without the consent of the Commission which also determines the suitability of employers for training apprentices and the educational qualifications required for entry to a particular trade.

The apprentice serves a probationary period before a contract (indentures) is made with the employer and registered with the Commission. The Commission determines disputes about the contracting parties' rights, duties and liabilities and no apprenticeship may be terminated, suspended or assigned other than by its authority; when an apprenticeship has been completed, the employer and the Commission certify to this effect. Where apprentices are required to undertake technical training, either at technical classes or by correspondence, instruction is mandatory. Apprentices attend technical classes

for eight hours per week during working hours without loss of pay. The progress apprentices make is reported to the Commission and unsatisfactory reports are investigated.

Apprentices are encouraged in the following ways: (i) by payment of *efficiency allowances* for annual examinations passed successfully in the allotted time; (ii) by *certificates of efficiency* for apprentices successfully completing the mandatory trade course of technical instruction; (iii) by reducing the apprenticeship term by one year in some cases, where the qualifying trade course is completed in the allotted time; and (iv) by the award of bursaries.

Four bursaries (two \$300, two \$150) are awarded each year to outstanding apprentices, and a fifth bursary (\$450) is awarded to 'The Apprentice of the Year'. These bursaries are given to assist the most promising apprentices to secure wider trade experience with another employer as part of the apprenticeship training, either in Tasmania or another State. Arrangements are made by the Commission to suit the bursary holders' wishes.

Numbers of Apprentices

The following table shows the number of apprentices in Tasmania and also details of new apprenticeships registered and apprenticeships completed:

Number of Apprentices				
Particulars	1967-68	1968-69	1969-70	1970-71
Number at 30 June (a)—				
Indentured Apprentices	3,325	3,470	3,585	3,592
Apprentices on Probation	452	401	295	320
Total	3,777	3,871	3,880	3,912
During Year—				
New Apprenticeships Registered	927	1,025	1,034	990
Apprenticeships Completed	704	705	713	763

(a) Distributed in proclaimed trades; approximately 130 had been proclaimed at 30 June 1970.

Industrial Accidents

Industrial accident statistics in Tasmania are compiled from returns of workers' compensation claims submitted by insurance companies, self-insurers and State Government Departments. The statistics now published by the Bureau replace those formerly published by the Department of Labour and Industry. Because of a number of minor definitional, conceptual and classification changes adopted for the new series, the statistics shown in the following tables are not strictly comparable with those published in earlier years by the Department of Labour and Industry.

The collection is limited to those employees covered by the Tasmanian Workers' Compensation Act and therefore excludes self-employed persons, Commonwealth Government employees and the police. Exclusion of self-employed persons is likely to reduce coverage in industries where self-employment is prevalent (e.g. retail trade, rural industries). Because of the exclusion of Commonwealth employees, some industries are not covered at all, while coverage is considerably reduced in other industries, e.g. communications.

In compiling the statistics the following definitions have been adopted:

Industrial Accident: A compensated work injury causing death or absence of the injured person from work for one day or more. Disease cases and accidents occurring during journeys or recess periods are included. The number of accidents is based on claims finalised during each year ended 30 June. The accidents to which the claims refer may have occurred in the year the claim was finalised or during any earlier year.

Accident Factor: Interpreted in general as that underlying agency, other than human failing, which appears to contribute most materially to an accident and which would be most likely to receive attention in preventing recurrence of a similar accident.

Time Lost: The actual time lost from work of persons reported to be temporarily incapacitated or permanently partially-incapacitated as a result of a compensated work injury.

Cost of Claims: Includes compensation of wages lost, hospital and medical expenses and lump sum settlements of cases finalised during the year ended 30 June.

Industry Group: Classified in accordance with the 1966 Census Classification of Industries and Occupations.

The table that follows shows the number of industrial accidents which occurred during 1969-70 and the time lost through those accidents which caused temporary and permanent partial-disability.

Fatal and Non-Fatal Accidents: Industry Group and Time Lost, 1969-70

Industry Group	Accidents		Time Lost—Temporary Disability Only (a)	
	Fatal	Non-fatal	Total	Average per Accident
	no.	no.	weeks	weeks
Primary, Mining, etc.—				
Primary production	2	596	1,866	3.1
Mining and quarrying	1	460	1,041	2.3
Total	3	1,056	2,907	2.8
Manufacturing—				
Cement, bricks, etc.	1	142	239	1.7
Engineering, etc.	2	965	2,079	2.2
Ships, vehicles, etc. .. ..	..	149	171	1.1
Food, drink, etc. .. ..	..	833	1,376	1.7
Sawmilling, etc. .. ..	..	674	1,454	2.2
Other manufacturing	1	720	1,330	1.8
Total	4	3,483	6,648	1.9
Other Industries—				
Electricity, gas, water, etc. ..	..	421	619	1.5
Building and construction ..	4	1,617	2,772	1.7
Transport and communication ..	1	396	1,038	2.6
Finance and property .. ..	..	8	31	3.9
Commerce .. ..	..	602	1,013	1.7
Public authority (n.e.i.), etc. ..	..	28	56	2.0
Community and business services .. ..	..	188	377	2.0
Amusements, hotels, etc.	1	182	574	3.2
Other .. ..	..	7	30	4.3
Total	6	3,449	6,511	1.9
Grand Total	13	7,988	16,066	2.0

(a) Includes permanent partial disability cases.

The cost of industrial accidents, as applicable to each industrial group is shown in the next table:

Industry Group and Cost of Claims, 1969-70
(\$)

Industry Group	Cost of Claims			
	Fatal Accidents	Non-fatal Accidents	Total Accidents	Average per Non-fatal Accident
Primary, Mining, etc.—				
Primary production	24,198	116,780	140,978	196
Mining and quarrying	382	67,754	68,136	147
Total	24,580	184,534	209,114	175
Manufacturing—				
Cement, bricks, etc.	18,173	15,657	33,830	110
Engineering, etc.	14,523	142,280	156,803	147
Ships, vehicles, etc. .. ..	..	9,383	9,383	63
Food, drink, etc. .. ..	..	105,837	105,837	127
Sawmilling, etc. .. ..	..	92,237	92,237	137
Other manufacturing	10,124	74,680	84,804	104
Total	42,820	440,074	482,894	126
Other Industries—				
Electricity, gas, water, etc. ..	..	31,589	31,589	75
Building and construction ..	33,678	154,125	187,803	95
Transport and communication ..	175	66,953	67,128	169
Finance and property .. ..	..	2,175	2,175	272
Commerce .. .. .	..	54,165	54,165	90
Public authority (n.e.i.), etc. ..	..	3,209	3,209	115
Community and business services ..	..	16,122	16,122	86
Amusements, hotels, etc.	316	21,600	21,916	119
Other .. .. .	..	1,040	1,040	149
Total	34,169	350,978	385,147	102
Grand Total	101,569	975,586	1,077,155	122

Factors, other than human failing, which were deemed to have been materially responsible for non-fatal accidents are shown in the following table:

Non-Fatal Accidents: Industry Group and Accident Factor, 1969-70

Industry Group	Accident Factor				
	Machinery	Vehicles	Electricity, Explosions, etc.	Harmful Substances	Falling, Slipping, Stumbling, etc.
Primary, Mining, etc.—					
Primary production	no. 23	no. 47	no. 5	no. 4	no. 133
Mining and quarrying	20	26	9	4	114
Total	43	73	14	8	247
Manufacturing—					
Cement, bricks, etc.	5	8	4	3	25
Engineering, etc.	137	26	56	12	120
Ships, vehicles, etc.	21	5	2	1	19
Food, drink, etc.	69	33	38	9	143
Sawmilling, etc.	137	26	2	..	90
Other manufacturing	102	28	21	9	145
Total	471	126	123	34	542

Non-Fatal Accidents: Industry Group and Accident Factor, 1969-70—*continued*

Industry Group	Accident Factor				
	Machinery	Vehicles	Electricity, Explosions, etc.	Harmful Substances	Falling, Slipping, Stumbling, etc.
Other Industries—	no.	no.	no.	no.	no.
Electricity, gas, water, etc. ..	25	23	15	5	91
Building and construction ..	77	82	16	11	372
Transport and communication ..	11	53	2	2	119
Finance and property ..	..	2	..	..	..
Commerce	44	41	12	2	98
Public authority (n.e.i.), etc. .	1	1	..	1	12
Community and business services	5	11	14	1	60
Amusements, hotels, etc. ..	7	9	13	..	49
Other .. ..	..	..	..	..	2
Total	170	222	72	22	803
Grand Total	684	421	209	64	1,592

Non-Fatal Accidents: Industry Group and Accident Factor, 1969-70—*continued*

Industry Group	Accident Factor				
	Striking Against, Stepping on, etc.	Handling, Moving or Falling Objects	Hand Tools	Other and Unspecified	Total
Primary, Mining, etc.—	no.	no.	no.	no.	no.
Primary production	32	183	114	55	596
Mining and quarrying	22	189	46	30	460
Total	54	372	160	85	1,056
Manufacturing—					
Cement, bricks, etc.	13	60	14	10	142
Engineering, etc.	48	381	123	62	965
Ships, vehicles, etc.	7	50	37	7	149
Food, drink, etc.	67	245	191	38	833
Sawmilling, etc.	23	315	69	12	674
Other manufacturing	45	274	69	27	720
Total	203	1,325	503	156	3,483
Other Industries—					
Electricity, gas, water, etc. ..	29	150	52	31	421
Building and construction ..	113	606	238	102	1,617
Transport and communication ..	16	160	19	14	396
Finance and property	1	5	..	..	8
Commerce	51	216	114	24	602
Public authority (n.e.i.), etc. .	..	8	3	2	28
Community and business services	10	69	13	5	188
Amusements, hotels, etc. ..	14	49	19	22	182
Other .. ..	..	4	1	..	7
Total	234	1,267	459	200	3,449
Grand Total	491	2,964	1,122	441	7,988

Industrial Safety and Accident Prevention

Responsibility: The Department of Labour and Industry is concerned with industrial safety and accident prevention, and discharges this function with the knowledge that there are approximately 9,000 accidents involving lost time each year among the population covered by the *Workers' Compensation Act*.

Cause of Industrial Accidents: Two major factors are held to underly most industrial accidents, namely: (i) unsafe working conditions; and (ii) unsafe actions; in some accidents, both factors may be operative.

Prevention: Prevention obviously has a two-fold aspect: (i) inspection programmes aimed at pin-pointing unsafe working conditions; and (ii) education and training designed to eliminate unsafe actions.

Training: The problem of training is basically one of educating supervisors and foremen since an attitude of 'safety consciousness' has to start with management. Formal training in industrial safety and accident prevention is available at Hobart and Launceston Technical Colleges in two-year, four subject courses. Informal training is arranged by the Department of Labour and Industry, the two-day courses available being based on the concept of 'training within industry'. Single lectures on industrial and farm safety are also available and the Department makes arrangements to provide lecturers on request.

Safety Officers: It is expected that large undertakings will have their own specialists concerned with safety matters. However, government safety officers are available to industries which may use their services for a short period. Their function is purely advisory and they assist organisations which wish to stress safety or to reduce their accident rates.

Research Facilities: The Department carries out a safety research programme. A comprehensive classification of safety data and information is maintained from local, interstate and overseas sources.

Workers' Compensation

Legislation: Workers' compensation legislation in Tasmania was first introduced in 1910 but it was not until 1927 that the principle of compulsory insurance was embodied in the *Workers' Compensation Act* 1927, as amended.

Purpose and Limitations: The principle of the Act is provision for compensation on the death or disablement of a worker, if occasioned by personal injury caused in the course of employment. In 1966, the Act was amended to extend compensation cover for injuries sustained by a worker travelling in either direction between his residence and place of employment. The Act provides that this cover to and from work applies only for reasonably direct journeys, except for breaks or deviations connected with the worker's employment. Amendments in 1970 extended coverage to workers who are temporarily absent from work during meal breaks. Self-inflicted injuries are excluded and certain limitations are applied where serious or wilful misconduct is involved.

Monetary benefits have fixed limits. All reasonable costs of medical, hospital, nursing and ambulance services, and in the event of death, the reasonable costs of burial or cremation, are paid up to a maximum of \$4,000. (Before 11 January 1971 the maximum amount was fixed at \$2,500.) In addition weekly payments are made during incapacity and there is a lump sum entitlement for scheduled injuries.

Non-contributory Basis: The Act is non-contributory, i.e. the worker does not pay into any fund for the provision of benefits. The employer is obliged to insure with an approved insurance company against the liability to compensation, except in certain cases where he is allowed to carry his own risk.

In any case where an employer has no paid-up insurance policy, where the employer cannot be found or where the employer or his insurance company has become insolvent, the worker may claim against a 'nominal insurer' as if he were the employer.

Amounts paid by the 'nominal insurer' are provided by all insurance companies carrying on Workers' Compensation business. Each company is required to contribute to these types of claim in proportion to the premium income derived from policies effected during the preceding year.

Compensation on Death: Where death results from an injury, the compensation payable to dependants wholly dependent on the worker's earnings is 284 times the current Hobart base rate, plus seven times the current Hobart base rate for each worker's child under sixteen years at the date of injury. Partial dependants are entitled to proportionate amounts.

Base Rate means the minimum weekly wage payable to the lowest paid adult male employed at Hobart under the Federal Metal Trades Award (in March 1971 the minimum was \$47.00 per week).

Weekly Payments During Incapacity: When the worker is totally incapacitated, the following weekly payments apply: (i) in respect of the worker—70 per cent of the base rate; (ii) in respect of a dependent wife—seventeen per cent of the base rate; and (iii) in respect of a dependent child under sixteen (or a full-time student under 21)—nine per cent of the base rate. (The base rate used to calculate payments was \$47.00 at 1 March 1971). The application of these formulae, however, is subject to a restriction set out in the next section headed 'Maximum Limit of Weekly Payments'.

When a worker is partially incapacitated, he receives the rates appropriate to total incapacity reduced by application of the following factor:

$$\frac{\text{Loss of Weekly Earnings}}{\text{Average Weekly Earnings}}$$

('Average weekly earnings', in this context, refers to his earnings before the date when the injury was sustained.)

Maximum Limit of Weekly Payments: The only limit placed on weekly payments is that they must not exceed the employee's average weekly earnings prior to sustaining the injury.

In cases of partial or total incapacity of any worker, the total liability of an employer in making weekly compensation payments is limited to 284 times the current Hobart base rate.

Lump Sum Payments: In addition to weekly incapacity payments, lump sum payments are made in respect of the loss of members of the body or of bodily powers of function. In the Act, specific injuries are listed and the single amount payable is related to the current Hobart base rate (specified as B in the following examples): (i) loss of both feet, $B \times 284$; (ii) loss of leg, $B \times 138$; (iii) loss of thumb, $B \times 51$; and (iv) loss of great toe, $B \times 35$, etc. Where more than one of these injuries are suffered in the same accident, a maximum payment equal to $B \times 532$ may be paid.

Factory Legislation and Inspection

Legislation: Working conditions in factories in Tasmania are covered under the *Factories, Shops and Offices Act 1965*, as amended, which makes provision with respect to the health, welfare, safety, and working conditions of persons employed in factories, shops, and offices and the sanitation of factories, shops, and offices. Factories are designated in two classes: premises in which four or more persons including the occupier are employed ('occupier' in this context may mean the employer, manager, foreman, agent or other person apparently in charge); a small factory where less than four are employed.

Registration Fees: All factories are required to register with the Department of Labour and Industry; fees date from 1 January each year. Fees for registration range from \$2 for small factories, up to \$40 for factories employing one hundred persons, and \$20 for each additional hundred.

New Factories: The *Local Government Act 1962* requires that plans and specifications for proposed new factory buildings be submitted to the Department of Labour and Industry before being approved by the local government authority. This ensures compliance of the proposed factory buildings with regulations in regard to natural lighting, ventilation, fire exits, fire protection, stairs, access ladders, platforms, change and meal rooms, etc.

Application for Registration: Following application for registration of premises to be used as a factory, an inspection is made. If the premises are suitable without alteration, a certificate of registration is issued. If alterations are required, a permit to occupy may be issued for a limited time, while renovations, to comply with the Act's requirements, are made. Once the factory is operating, a further inspection is made to study processes and working conditions. Any unsafe situations and practices are drawn to the attention of management.

Inspection: After the initial registration, routine inspections are made by officers of the Department to remedy or prevent unsafe conditions or unsafe practices which may have developed. Particular attention is given to overcrowding, ventilation, natural and artificial lighting, conditions of floors, etc. Access ladders and platforms are checked for compliance with prescribed standards. If contamination of the atmosphere by dust or toxic fumes is present, means of removal are studied. Safe handling and storage of dangerous substances; the provision of fire protection, fire exits and escapes; adequacy of sanitary conveniences, washing, change and meal rooms; the provision of safety equipment, etc. are periodically checked.

Accident Reports: Where accidents involving the use of machinery incapacitate, or appear likely to incapacitate, workers for seven days or more, factory management is required to notify the Department. These accidents are investigated in an endeavour to eliminate recurrences. See 'Industrial Safety and Accident Prevention' in this chapter.

Construction Sites: Regulations also apply to working conditions on construction works and provide for suitable sanitary, washing and general amenities, in addition to general safety precautions. Where persons are required to work on any construction works at a height of not less than 20 feet above the ground or at a depth of not less than five feet below ground level, the provision of safety helmets is compulsory.

The Inspection of Machinery

Legislation: Generally, the *Inspection of Machinery Act* 1960, as amended, applies to all machinery of one or more horsepower used in manufacturing or industrial processes and specifically includes boilers, pressure vessels, lifts and cranes. By proclamation, machines not ordinarily covered by the Act may be made subject to its provisions. The Department of Labour and Industry is responsible for application of the Act which is administered by a chief inspector and district inspectors at Hobart, Launceston and Burnie.

Machinery Inspection: An owner (defined as a person who has the control of or is in charge of machinery) acquiring machinery as defined in the Act is required to notify the nearest district inspector to obtain a certificate of safety. Inspection may reveal the need for additional safeguards before permission can be given to operate the machine; alternatively the owner may be given a set period in which to comply.

Certificates of safety are renewed annually providing the machinery satisfies current efficiency and safety standards.

Lifts Inspection: Lifts, cranes and hoists are subject to the same inspections as other machinery. In addition design approval must be obtained before construction; tests, including beam deflections under load, are made on completion.

Boilers Inspection: Before boilers or pressure vessels are installed, the design must be approved by the Chief Inspector and conform with specified Australian or overseas standards. Inspections are made on installation and thereafter annually, unless a special investigation is required arising from plant modification, accidents or from employers' or employees' requests.

Shop Trading Hours

Legislation: Before 1967 shop trading hours were regulated by the *Factories, Shops and Offices Act* 1958, as amended. A deadlock between the two houses of the Tasmanian Parliament in 1967 resulted in the removal of all legislative restrictions on shop trading hours as from 1 January 1968.

However, a limiting factor was introduced with the adoption by Wages Boards of increased penalty rates for retail trade employees. As a result few shopkeepers have varied their trading hours from those which applied under the relevant section of the *Factories, Shops and Offices Act*.

Petrol Filling Stations: Although restrictions on shop trading hours were removed following the 1967 Parliamentary deadlock, legislation covering petrol filling station trading hours was retained. Ordinary permitted hours are 6.30 am to 7.30 pm on week days (with an extra two hours on Friday evening) and 12.30 pm closing on Saturdays and public holidays. However, a system operates to give the public an opportunity to buy petrol outside these hours and on Sundays at rostered filling stations.

TRADE UNIONS

Details of membership of trade unions are collected at 31 December each year. The following table shows details of the number of unions and the number of members in Tasmania from 1939, as well as the annual percentage increase for the past six years:

Trade Unions: Numbers and Membership

Year Ended December	Number of Separate Unions	Number of Members (⁰⁰⁰)	Percentage Increase in Membership (a)
1939	79	22.1	..
1949	97	40.7	..
1955	101	51.4	..
1960	101	56.0	..
1965	109	63.4	6.0
1968	112	68.2	0.1
1969	112	69.9	2.4
1970	114	73.9	5.7

(a) On preceding year.

Details of the numbers and membership of trade unions in the various industry groups are shown below. However, this table does not provide a precise classification because where the members of a union are employed in a number of industries, they have been classified to the predominant industry covered by that union.

Trade Unions: Number and Membership by Industry Group

Year Ended December	Manufac- turing	Building and Construc- tion	Transport	Public Authority (a)	Other (b)	All Groups
NUMBER OF SEPARATE UNIONS						
1965	32	6	15	28	28	109
1966	32	6	15	27	30	110
1967	29	6	14	28	30	107
1968	31	6	14	29	32	112
1969	30	6	14	29	33	112
1970	32	6	15	30	31	114
NUMBER OF MEMBERS (⁰⁰⁰)						
1965	21.2	4.7	6.7	15.6	15.3	63.4
1966	22.0	4.8	6.6	15.8	16.4	65.5
1967	22.6	4.5	6.7	16.8	17.6	68.1
1968	22.4	4.3	6.9	17.3	17.3	68.2
1969	24.0	4.3	6.6	17.9	17.0	69.9
1970	25.0	4.1	6.7	18.6	19.7	73.9

(a) Includes: communication and municipal, etc.

(b) Includes: agriculture, etc.; mining and quarrying; banking; insurance; clerical, wholesale and retail trade; amusements; hotels; personal service, etc.; and community and business services.

PRICES

Retail Prices and Price Indexes

General

The description of price indexes that follows is, in the main, an abridgement of the text appearing in the *Labour Report* of the Commonwealth Bureau of Census and Statistics; this report is a basic document in any serious study of official price indexes. A more detailed account appears in the *Tasmanian Year Books* 1967 to 1971 inclusive.

Retail Price Index Numbers from 1901

Retail prices of food and groceries and average rentals of houses for periods extending back to the year 1901 were collected by the Commonwealth Statistician. A continuous prices series from 1901 to the present day (shown below) has been constructed from the various indexes in use during this period to provide a broad indication of long-term trends in retail price levels. The index numbers are derived by linking a number of indexes that differ greatly in scope. The successive indexes used are: 1901-1914, the 'A' Series; from 1914 to 1946-47, the 'C' Series; from 1946-47 to 1948-49, a composite of Consumer Price Index Housing Group (partly estimated) and 'C' Series excluding rent; and from 1948-49, the Consumer Price Index. It should be noted that this long-term series is for the six capital cities combined, *not for Hobart alone.*

Retail Price Index Numbers from 1901
Six State Capital Cities Combined
(Base: Year 1911 = 100)

Year	Index Number	Year	Index Number	Year	Index Number
1901	88	1935	138	1965	502
1911	100	1940	159	1966	517
1915 (a) ..	130	1945	187	1967	534
1920 (a) ..	193	1950	262	1968	548
1925	165	1955	394	1969	564
1930	162	1960	459	1970	586

(a) November; remaining figures are averages for the respective years.

Consumer Price Index

The index currently in use is the Consumer Price Index. A comprehensive view of the present composition and weighting of the Consumer Price Index is given in the following table. The weights shown are those comprising the index for the six State capital cities combined. Broadly they are based on the estimated pattern of consumption for the period 1962-63 to 1966-67 valued at relevant prices of December quarter 1968. The weighting indicates the relative influence given to the various components in measuring the degree of price change in the index from December quarter 1968 (i.e. from the beginning of the current linked series).

Consumer Price Index
Composition and Weighting Pattern at December Quarter 1968 for the Six
State Capital Cities Combined

Group, Section, etc.	Percentage Weight	
	Section, etc.	Group
Food—		
Cereal Products—Bread, flour, biscuits, rice and breakfast foods	4.1	31.3
Dairy Produce—Milk, cheese, butter and eggs	6.0	
Potatoes, Onions, Preserved Fruit and Vegetables—Potatoes and onions, canned and dried fruits, and canned and frozen vegetables	2.7	
Soft Drink, Ice Cream and Confectionery	4.3	
Other (except Meat)—Sugar, jam, margarine, tea, coffee, baby foods, and sundry canned and other foods	3.3	
Meat—Butcher's (Beef, mutton, lamb and pork)	8.4	
Processed (Bacon, smallgoods and canned meat) including Poultry	2.5	

Consumer Price Index
Composition and Weighting Pattern at December Quarter 1968 for the Six
State Capital Cities Combined—continued

Group, Section, etc.	Percentage Weight	
	Section, etc.	Group
Clothing and Drapery—		
Clothing—		
Men's	3.6	14.1
Women's	5.0	
Boys'	0.6	
Girls'	0.8	
Piecegoods, etc.—Wool, cotton, and rayon cloth nursery squares and knitting wool	0.8	
Footwear—Men's, women's and children's	2.5	
Household Drapery—Bedclothes, towels, tablecloths, etc.	0.8	
Housing—		
Rent—Privately owned Houses	2.1	14.2
Government owned houses	0.9	
Privately owned flats	3.1	
Home Ownership—House price	3.4	
Rates	2.7	
Repairs and maintenance	2.0	
Household Supplies and Equipment—		
Fuel and Light—Electricity	2.4	12.5
Gas	1.0	
Other (Firewood, heating oil, briquettes and kerosene)	0.6	
Household Appliances—Refrigerator, washing machine, stove, radio set, television set, vacuum cleaner, electric iron, etc.	2.6	
Other Household Articles—		
Furniture and Floor Coverings	1.9	12.5
Kitchen and Other Utensils, Gardening and Small Tools	0.7	
Household Sundries (Household soaps, etc.)	1.0	
Personal Requisites (Toilet soap, cosmetics, etc.)	1.2	
Proprietary Medicines	0.9	
School Requisites	0.2	
Miscellaneous—		
Transport—Fares—Train	1.0	27.9
Tram and bus	1.5	
Private Motoring—Car purchase	3.4	
Car operation	5.8	
Tobacco and Cigarettes	3.6	
Beer	3.7	
Services—Health (Dentist, doctor, hospital)	3.3	
Hairdressing (Haircut, wave, etc.)	0.7	
Drycleaning	0.5	
Shoe repairs	0.2	
Postal and telephone services	1.1	
Other—Radio and television operation	1.1	
Cinema admission	0.8	
Newspapers and weekly magazines	1.2	
Total	100.0	100.0

Six Capital Cities Index: The Six Capital Cities Consumer Price Index is derived as the weighted average of the indexes for the individual cities, the basis of weighting being their populations as recorded at the latest Census.

Comparison of the Six Linked Series: The Consumer Price Index is a chain of 'fixed weight aggregative' indexes, with significant changes in composition and weighting effected at the linking dates; the principal changes were:

- (i) June quarter 1952—introduction of private motoring; changed proportions for modes of house occupancy; change in weights of fuel and fares.
- (ii) June quarter 1956—changed proportions in modes of house occupancy; changed weights for fuel, fares and private motoring.
- (iii) March quarter 1960—introduction of television.
- (iv) December quarter 1963—changed weights for fuel, light, fares and motoring; revised housing weights.
- (v) December quarter 1968—changed weights for all items; introduction of poultry, rented privately-owned flats, heating oil, briquettes and health services (by dentists, doctors, hospitals and health insurance funds).

The next table has been compiled to show the percentage contribution to the total index of each of the major groups, first at the beginning of each series, and then at the quarter in which the linking transition was made.

Consumer Price Index: Analysis of Weighting in Six Linked Series

Linked Series	Percentage Contribution to Total Index (Weighted Average, Six Capital Cities)					
	Food Group	Clothing and Drapery Group	Housing Group	Household Supplies and Equipment Group	Miscellaneous Group	Total
First—						
June Qtr 1949	31.3	22.8	11.4	13.1	21.4	100.0
June Qtr 1952 (a)	35.7	23.0	9.2	12.2	19.9	100.0
Second—						
June Qtr 1952 (b)	33.6	21.6	9.4	11.7	23.7	100.0
June Qtr 1956 (a)	34.3	20.0	10.5	10.9	24.3	100.0
Third—						
June Qtr 1956 (b)	33.7	19.7	10.5	11.6	24.5	100.0
March Qtr 1960 (a)	33.0	19.5	11.0	11.5	25.0	100.0
Fourth—						
March Qtr 1960 (b)	32.1	19.0	10.7	13.2	25.0	100.0
Dec. Qtr 1963 (a)	31.6	18.8	12.0	12.6	25.0	100.0
Fifth—						
Dec. Qtr 1963 (b)	32.1	16.9	12.6	14.5	23.9	100.0
Dec. Qtr 1968 (a)	32.8	15.8	13.2	13.1	25.1	100.0
Sixth—						
Dec. Qtr 1968 (b)	31.3	14.1	14.2	12.5	27.9	100.0

(a) Change in proportions due to disparate price movements during short period shown.

(b) Change in proportions due to deliberate changes in composition or weighting.

Consumer Price Index, Hobart

The Consumer Price Index for Hobart is compiled to the base 1966-67=100.0, the number 100 being the base value for each of the five major groups (Food, Clothing and Drapery, Housing, etc.) and also for the 'All Groups' index.

The following table has been compiled to show group index movements for Hobart on a quarterly basis:

Consumer Price Index: Quarterly Group Index Numbers, Hobart (a)
(Base of Each Index: Year 1966-67 = 100.0)

Quarter	Food	Clothing and Drapery	Housing	Household Supplies and Equipment	Miscellan- eous	All Groups
1966-67—Sept. ..	98.5	98.9	98.1	99.6	98.3	98.6
Dec. ..	98.8	99.9	99.8	99.7	99.0	99.2
March ..	100.7	100.1	100.6	99.9	101.2	100.6
June ..	102.1	101.2	101.5	100.8	101.5	101.5
1967-68—Sept. ..	108.6	101.5	101.7	101.2	103.2	104.3
Dec. ..	107.5	102.3	103.7	103.4	104.7	105.0
March ..	105.9	102.5	104.1	103.3	104.8	104.6
June ..	105.1	103.1	104.7	103.7	105.3	104.6
1968-69—Sept. ..	105.1	103.5	105.5	104.1	106.3	105.0
Dec. ..	105.3	104.5	108.4	104.1	107.3	105.8
March ..	105.1	104.7	109.4	104.7	109.0	106.5
June ..	105.8	105.3	110.1	105.2	109.4	107.0
1969-70—Sept. ..	105.6	106.2	110.6	105.5	110.0	107.4
Dec. ..	106.0	107.6	112.3	105.8	110.4	108.1
Mar. ..	106.9	108.2	113.2	106.3	111.2	108.9
June ..	106.9	109.4	114.1	106.9	112.5	109.6
1970-71—Sept. ..	108.4	109.5	115.0	107.6	112.2	110.2
Dec. ..	110.1	111.0	117.0	108.4	116.3	112.4
March ..	109.5	112.0	118.2	109.1	118.3	113.2
June ..	110.2	115.0	119.2	111.6	119.4	114.6

(a) Figures after decimal point have limited significance. They are inserted to avoid the distortions that would occur in rounding.

The following table shows the 'All Group' index numbers for Hobart quarter by quarter, and also as averages for financial years:

Consumer Price Index: All Groups Index Numbers, Hobart (a)
(Base of Index: Year 1966-67 = 100.0)

Year	Quarter Ending—				Average for Year
	September	December	March	June	
1958-59	83.4	84.1	84.4	84.5	84.1
1959-60	84.8	85.1	85.6	86.8	85.6
1960-61	89.1	90.0	90.9	91.3	90.3
1961-62	91.4	90.9	90.3	90.3	90.7
1962-63	90.4	90.8	90.7	90.8	90.7
1963-64	91.2	91.4	91.9	92.2	91.7
1964-65	93.3	94.5	94.9	95.8	94.6
1965-66	97.0	98.3	97.8	98.7	98.0
1966-67	98.6	99.2	100.6	101.5	100.0
1967-68	104.3	105.0	104.6	104.6	104.6
1968-69	105.0	105.8	106.5	107.0	106.1
1969-70	107.4	108.1	108.9	109.6	108.5
1970-71	110.2	112.4	113.2	114.6	112.6

(a) Figures after decimal point have limited significance. They are inserted to avoid the distortions that would occur in rounding.

The next table shows, as averages for financial years, the group indexes for Hobart.

Consumer Price Index: Annual Group Index Numbers, Hobart (a)
(Base of Each Index: Year 1966-67 = 100.0)

Year	Food	Clothing and Drapery	Housing	Household Supplies and Equipment	Miscellaneous	All Groups
1960-61	92.4	93.5	81.9	94.9	87.0	90.3
1961-62	90.2	94.7	85.6	97.5	87.5	90.7
1962-63	88.9	95.2	88.2	97.1	87.6	90.7
1963-64	90.1	95.7	90.9	97.1	88.4	91.7
1964-65	94.0	97.0	94.5	97.6	92.0	94.6
1965-66	98.9	98.0	97.1	98.6	96.7	98.0
1966-67	100.0	100.0	100.0	100.0	100.0	100.0
1967-68	106.8	102.4	103.6	102.9	104.5	104.6
1968-69	105.3	104.5	108.4	104.5	108.0	106.1
1969-70	106.4	107.9	112.6	106.1	111.0	108.5
1970-71	109.6	111.9	117.4	109.2	116.6	112.6

(a) Figures after decimal point have limited significance. They are inserted to avoid the distortions that would occur in rounding.

Average Prices of Foodstuffs, Hobart

The average retail prices of selected foodstuffs in Hobart since 1950 are shown in the next table. The list, while representative of foodstuffs commonly consumed, is not exhaustive; for a description of foodstuffs in the Consumer Price Index regimen, see the earlier table 'Consumer Price Index, Composition and Weighting Pattern'.

Average Retail Prices (a): Hobart
Selected Items of Foodstuffs
(Cents)

Article	Unit (a)	1950	1955	1960	1965	1969	1970
Bread (delivered) ..	2 lb	6.6	12.0	14.2	15.8	20.1	21.3
Flour (plain)	"	4.7	9.5	11.8	13.7	16.8	17.5
Tea	$\frac{1}{2}$ lb	15.2	36.6	34.2	32.9	31.9	30.7
Sugar (b)	1 lb	4.2	7.5	9.3	9.5	11.2	11.1
Potatoes	7 lb	17.7	41.2	34.5	69.2	42.4	44.9
Butter (factory) ..	1 lb	22.0	43.4	46.9	49.6	54.2	55.0
Eggs (c)	doz	33.5	55.8	56.7	61.0	68.3	67.7
Bacon (rashers) (d) ..	1 lb	32.6	57.4	68.3	89.2	99.2	100.9
Milk, bottled, delivered	qt	9.5	16.5	17.3	17.8	20.0	20.2
Beef—							
Rump Steak	1 lb	22.8	47.4	65.9	79.4	90.9	93.9
Corned Silverside ..	"	16.9	34.0	44.2	51.6	61.6	63.0
Mutton—							
Leg	"	11.8	23.8	24.9	29.8	27.9	26.9
Loin Chops	"	11.5	18.9	19.0	25.2	24.7	23.8
Pork, Leg	"	26.9	41.8	53.9	61.8	66.9	66.8

(a) The table units are not necessarily those for which the original price data were obtained (see notes (b) and (d)). In such cases, prices have been calculated for the table unit.

(b) Prices obtained for one pound prior to 1966; for four pound packets from 1966.

(c) 'Large' prior to 1964; 'two ounce' eggs from 1964.

(d) Prices obtained for one pound prior to 1966; for half a pound from 1966.

Wholesale Price Indexes

General

The Bureau compiles two wholesale price indexes of basic materials. These are the 'Wholesale Price Index of Materials used in Building other than House Building' and the 'Wholesale Price Index of Materials used in House Building'. Two other indexes, the 'Melbourne Wholesale Price Index' and the 'Wholesale Prices (Basic Materials and Foodstuffs) Index', were compiled for a number of years but have been discontinued.

A further index, relating to materials used in manufacturing, is under consideration. This index, together with the two building indexes, will constitute a representative replacement for the now obsolete Wholesale Prices (Basic Materials and Foodstuffs) Index.

Melbourne Wholesale Price Index

The first wholesale price index compiled by the Bureau was the Melbourne Wholesale Price Index, originally computed in 1912, with weights for basic materials and food appropriate to usage in 1910.

The Melbourne Wholesale Price Index—now obsolete—was continued up to the year 1961 and is of historic interest since the series was taken back in time to 1861, but still using the weights appropriate to 1910. Details of this index, from 1861 to 1961, were published in the Bureau's *Labour Report*, No. 49 (1961).

Wholesale Price (Basic Materials and Foodstuffs) Index

From 1928 to December 1970 this index was compiled and published on a monthly basis. Prices used in the Wholesale Price (Basic Materials and Foodstuffs) Index were almost exclusively Melbourne prices.

New series of wholesale price indexes relating to material used and articles produced by defined areas of the economy are being developed. Two Wholesale Price Indexes: Of Materials Used in House Building; and Other Than House Building, have been completed.

The following table, giving index numbers for Wholesale Prices of Basic Materials and Foodstuffs is included for historical purposes and shows details for each commodity group. The data have been compiled as averages for calendar years but the series was also maintained on a monthly basis.

Wholesale Price (Basic Materials and Foodstuffs) Index Numbers
(Base of Each Index: Average of Three Years Ended June 1939=100)

Particulars	1964	1965	1966	1967	1968	1969	1970 (a)
Basic Materials—							
Metals and Coal ..	384	394	392	396	398	423	447
Oils, Fats and Waxes ..	207	212	220	221	225	} n.a.	} n.a.
Textiles ..	471	413	436	398	402		
Chemicals ..	284	297	361	389	395		
Rubber and Hides ..	232	263	312	245	232		
Building Materials ..	492	506	509	511	523	550	
Total (b) ..	342	349	361	360	364	377	381
Foodstuffs and Tobacco	358	375	393	407	409	403	407
Total All Groups (b)	351	365	378	387	388	391	395

(a) The last month of publication was December 1970.

(b) Weighted average.

Wholesale Price Index of Materials Used in Building Other Than House Building

General: This is the first of a series of indexes designed to replace the obsolete Wholesale Price (Basic Materials and Foodstuffs) Index. The index measures changes in the prices of selected materials used in the construction of buildings other than houses and 'low-rise' flats (in general, those up to three storeys).

Scope and Composition: Composition of the index is in accordance with actual material usage in building projects which were selected as being representative for purposes of determining weighting patterns. Completed values of the types of buildings selected constituted 86 per cent of all completed new buildings other than houses and low-rise flats in the period 1964-65 to 1966-67. Buildings for entertainment, recreation and religious purposes together with buildings in the Building Statistics category 'Miscellaneous Buildings' are not directly represented.

The index comprises 72 items combined into eleven groups. Items are described in terms of fixed specifications with the aim of recording price changes for representative materials of constant quality. The group weighting pattern is given in the next table.

Base Period: The reference base of the index is the year 1966-67=100.0. The index is a fixed-weights index and is calculated by the method known as 'the weighted arithmetic mean of price relatives'.

Wholesale Price Index of Materials Used in Building Other Than House Building
Composition and Weighting Pattern

Group	Percentage Weight of Group
Concrete Mix, Cement, Sand, etc.	10.41
Cement Products	3.64
Bricks, Stone, etc.	5.28
Timber, Board and Joinery	11.90
Steel and Iron Products	30.58
Aluminium Products	6.01
Other Metal Products	2.59
Plumbing Fixtures	1.19
Miscellaneous Materials	7.09
Electrical Installation Materials	8.61
Mechanical Services Components	12.70
Total	100.00

Prices: Price series used relate to specified standards of each commodity and are obtained in all State capital city urban areas from representative suppliers of materials used in building. In the main they are collected as at the mid-point of the month to which the index refers, or as near thereto as practicable. There are some exceptions to the use of local prices in the indexes for each capital city area. In a few cases where suitable price series are not currently available for an item in a given city, imputation is necessary. For each capital city area, the whole of the group 'Electrical Installation Materials' and the majority of the items in the group 'Mechanical Services Components' are based on Sydney and Melbourne price series.

Index Numbers: The index has been compiled for each month from July 1966, and for the financial years from 1966-67.

The separate city indexes measure price movements within each metropolitan area individually. They enable comparisons to be drawn between metropolitan areas as to differences in degree of price movement from period to period, but not as to differences in price level.

The following table compares movements in the index numbers for each of the six Capital Cities and the six Capitals combined since the beginning of 1966-67:

Wholesale Price Index of Materials Used in Building Other Than House Building
All Groups Index Numbers—Six State Capital Cities
 (Base of Each Index: Year 1966-67=100.0)

Period	State Capital Cities						Weighted Average of Six State Capital Cities
	Sydney	Mel- bourne	Brisbane	Adelaide	Perth	Hobart	
1966-67 ..	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1967-68 ..	102.6	101.7	102.2	101.8	102.0	102.3	102.2
1968-69 ..	106.5	105.0	105.1	105.0	104.7	105.1	105.6
1969-70 ..	111.7	109.8	110.3	109.4	108.9	109.7	110.5
1970-71 ..	116.4	115.1	116.4	113.9	113.3	115.0	115.5
1970-71—							
July ..	114.3	111.3	113.4	111.3	110.9	112.6	112.8
August ..	114.4	112.0	114.4	111.4	111.1	112.7	113.2
September ..	114.4	112.4	114.5	111.4	111.0	112.9	113.3
October ..	114.2	112.9	114.5	111.7	110.9	112.8	113.4
November ..	114.5	113.3	114.7	112.3	112.0	114.0	113.8
December ..	114.5	113.5	115.2	112.4	112.5	114.2	114.0
January ..	116.7	114.7	116.2	113.2	113.6	115.1	115.5
February ..	117.6	116.3	117.6	114.3	114.2	116.5	116.6
March ..	118.4	117.6	118.7	116.0	115.0	117.2	117.7
April ..	118.8	118.3	118.9	116.7	115.6	117.2	118.2
May ..	118.9	118.6	118.8	117.2	115.8	117.0	118.3
June ..	120.1	119.6	119.8	118.4	116.9	118.2	119.4

Index numbers for the Hobart urban area for each group of items are given in the following table:

Wholesale Price Index of Materials Used in Building Other Than House Building
Group Index Numbers, Hobart
 (Base of Each Index: Year 1966-67=100.0)

Period	Concrete Mix, Cement, Sand, etc.	Cement Products	Bricks, Stone, etc.	Timber, Board and Joinery	Steel and Iron Products	Aluminium Products
1966-67 ..	100.0	100.0	100.0	100.0	100.0	100.0
1967-68 ..	104.8	100.4	103.1	101.7	102.5	100.8
1968-69 ..	108.0	103.8	108.5	103.8	105.5	99.6
1969-70 ..	109.1	107.1	111.3	108.9	109.8	100.9
1970-71 ..	116.0	112.8	118.3	116.6	114.6	106.6
1968-69—						
September ..	107.0	103.7	108.4	102.5	104.2	99.5
December ..	107.6	103.7	108.6	104.2	104.9	99.5
March ..	108.8	103.7	108.6	104.7	107.0	99.5
June ..	108.8	106.4	108.7	105.7	107.1	100.3
1969-70—						
September ..	108.8	106.6	109.5	108.1	107.6	100.4
December ..	109.0	106.6	109.8	108.1	107.9	100.8
March ..	109.0	107.6	109.6	108.7	112.2	101.2
June ..	111.2	107.6	116.3	112.1	112.9	101.1
1970-71—						
September ..	111.8	110.2	118.5	113.0	113.0	101.1
December ..	117.8	112.0	120.1	115.1	113.3	106.1
March ..	118.6	116.3	120.7	120.2	116.0	112.6
June ..	118.7	117.0	115.5	120.6	119.1	110.0

Wholesale Price Index of Materials Used in Building Other Than House Building
Group Index Numbers, Hobart—continued

Period	Other Metal Products	Plumbing Fixtures	Miscel- laneous Materials	Electrical Installation Materials (a)	Mechanical Services Compon- ents (a)	All Groups
1966-67	100.0	100.0	100.0	100.0	100.0	100.0
1967-68	105.9	103.2	101.7	100.9	101.4	102.3
1968-69	103.1	105.5	103.0	102.1	107.7	105.1
1969-70	122.3	114.0	107.5	112.2	111.8	109.7
1970-71	125.3	122.7	111.6	110.9	118.9	115.0
1968-69—						
September ..	101.0	103.7	103.0	99.0	106.0	103.8
December ..	101.1	104.6	103.0	100.2	108.1	104.7
March ..	102.1	108.3	103.2	104.6	108.7	106.1
June ..	112.3	108.3	103.2	107.2	109.3	106.9
1969-70—						
September ..	117.3	111.5	103.9	111.3	109.3	108.0
December ..	124.0	114.4	107.5	112.7	109.4	108.7
March ..	124.0	115.3	109.4	113.4	115.1	111.1
June ..	125.0	116.4	109.7	113.6	115.3	112.4
1970-71—						
September ..	125.0	120.8	110.7	111.5	116.6	112.9
December ..	123.2	121.6	110.9	109.4	116.9	114.2
March ..	125.9	125.5	111.8	110.6	121.8	117.2
June ..	126.8	127.5	114.7	111.6	122.7	118.2

(a) The whole of the group 'Electrical Installation Materials' and the majority of items in the group 'Mechanical Services Components' are based on Melbourne and Sydney price series.

Wholesale Price Index of Materials Used in House Building

General: This index is complementary to the 'Other than House Building' index and measures the change in prices of selected materials used in house construction. The two building indexes constitute an up-to-date replacement for the 'Building Materials Group' of the now obsolete Wholesale Prices (Basic Materials and Foodstuffs) Index.

Scope and Composition: The materials selected and weights given to the items were in accordance with the usage of materials in a sample of representative house types constructed in or about 1968-69. The house types included in the sample were those using brick, brick veneer, timber or asbestos-cement sheeting for the outer-walls. Within the four major construction types account was taken of a range of characteristics, e.g. material used for internal partitions, window frames, roofs, etc. The number of items included in the index range from 49 (Brisbane) to 51 (Perth). The items are combined into eleven groups; an 'all groups' index is also published. Standards are fixed for items and price movements are for items of a constant quality.

Derivation of Items and Weights: The index is a fixed weight index and is calculated by the method known as the 'weighted arithmetic mean of price relatives'. The items and weights used are based on the reported values of materials used in the selected houses in each State capital city urban area. Information about materials used and their value was obtained for a total of 114 houses. The material values derived for each State Capital City were then used to develop weighting patterns for the individual cities and aggregated to give a weighting pattern for the six State capital cities combined. The next table gives the weighting pattern for the Hobart index.

Base Period: The index has a base year 1966-67 = 100.0, however, the weighting pattern is more appropriate to material usage during 1968-69.

**Wholesale Price Index of Materials Used in House Building
Composition and Weighting Pattern: Hobart**

Group	Percentage Weight of Group
Concrete Mix, Cement and Sand	7.25
Cement Products	7.01
Clay Bricks, Tiles, etc.	10.14
Timber, Board and Joinery	38.15
Steel Products	7.49
Other Metal Products	7.93
Plumbing Fixtures, etc.	2.74
Electrical Installation Materials	1.61
Installed Appliances	6.98
Plaster and Plaster Products	4.99
Miscellaneous Materials	5.71
Total	100.0

Prices: Prices relate to specified standards for each commodity and are obtained in all State capital city urban areas from representative suppliers of materials used in house building. The prices are collected as at the mid-point of the month to which the index refers.

Index Numbers: The index has been compiled for each month from July 1966 and for financial years from 1966-67. Index numbers are published for each group and combined into an all groups number for each State capital city and the six State capital cities combined.

The following table compares movements in the Index Numbers for each of the six Capital Cities and six Capitals combined since 1966-67:

**Wholesale Price Index of Materials Used in House Building
All Groups Index Numbers—Six State Capital Cities (a)
(Base of Each Index: Year 1966-67 = 100.0)**

Period	State Capital Cities						Weighted Average of Six State Capital Cities
	Sydney	Mel-bourne	Brisbane	Adelaide	Perth	Hobart	
1966-67 ..	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1967-68 ..	103.4	101.3	103.4	102.1	104.0	101.8	102.7
1968-69 ..	109.3	103.6	105.6	107.0	105.9	104.1	106.3
1969-70 ..	115.2	107.2	109.4	112.4	110.3	107.7	110.9
1970-71 ..	119.8	112.3	115.2	116.7	113.9	114.3	115.7
1970-71—							
July ..	117.2	108.2	111.2	113.2	111.0	110.9	112.3
August ..	117.4	108.4	111.7	113.3	111.1	111.0	112.5
September ..	117.4	108.8	112.1	114.2	111.0	111.1	112.7
October ..	117.6	109.5	112.6	114.5	111.2	111.3	113.1
November ..	118.0	110.2	112.9	115.4	111.7	112.9	113.7
December ..	118.3	110.5	113.0	115.5	113.4	113.1	114.2
January ..	119.5	112.1	113.6	115.7	114.8	113.4	115.3
February ..	120.9	115.1	118.2	117.1	115.0	117.0	117.5
March ..	122.2	115.9	118.9	119.4	116.1	117.5	118.6
April ..	122.8	116.2	119.2	119.9	116.8	117.6	119.1
May ..	122.9	116.4	119.2	120.7	117.1	117.5	119.3
June ..	123.2	116.6	119.5	121.0	117.7	117.8	119.6

Index numbers for the Hobart capital city urban area for each group of items are given in the next table:

**Wholesale Price Index of Materials Used in House Building
Group Index Numbers, Hobart**

(Base of Each Index: Year 1966-67 = 100.0)

Period	Concrete Mix, Cement and Sand	Cement Products	Clay Bricks, Tiles, etc.	Timber Board and Joinery	Steel Products	Other Metal Products
1966-67	100.0	100.0	100.0	100.0	100.0	100.0
1967-68	104.8	100.9	104.6	100.8	100.9	103.3
1968-69	108.0	105.3	109.6	102.8	104.0	102.5
1969-70	109.1	110.4	111.7	105.4	110.4	108.3
1970-71	116.0	114.6	120.6	113.9	116.5	113.7
1968-69—						
March	108.7	104.9	109.6	104.1	106.2	102.7
June	108.7	110.1	109.6	104.1	106.3	105.1
1969-70—						
September ..	108.7	110.3	109.8	104.6	108.0	106.9
December ..	108.9	110.3	110.9	104.6	109.6	108.6
March	108.9	110.6	110.9	105.3	113.7	108.6
June	111.3	110.6	115.6	108.8	114.2	109.5
1970-71—						
September ..	111.5	110.7	119.4	109.4	114.3	109.5
December ..	117.8	111.8	121.6	111.6	115.6	112.8
March	118.9	118.9	122.0	118.7	119.2	118.2
June	118.9	119.6	120.5	118.8	122.0	116.7

**Wholesale Price Index of Materials Used in House Building
Group Index Numbers, Hobart (a)—continued**

Period	Plumbing Fixtures, etc.	Electrical Install- ation Materials	Installed Appliances	Plaster and Plaster Products	Miscellan- ous Materials	All Groups
1966-67	100.0	100.0	100.0	100.0	100.0	100.0
1967-68	101.9	103.5	100.1	100.2	102.3	101.8
1968-69	104.5	105.9	99.9	104.6	103.1	104.1
1969-70	115.8	118.2	100.9	105.3	110.0	107.7
1970-71	123.8	115.9	102.5	108.1	115.5	114.3
1968-69—						
March	107.3	108.9	99.9	104.6	103.3	104.9
June	107.3	111.0	100.0	104.6	103.1	105.5
1969-70—						
September ..	109.8	116.9	100.0	104.7	103.9	106.2
December ..	116.6	117.8	100.2	104.7	110.1	107.2
March	119.7	117.8	100.9	106.1	112.8	108.1
June	120.1	123.2	102.2	106.1	113.4	110.5
1970-71—						
September ..	123.2	117.9	101.7	106.5	113.9	111.1
December ..	123.6	115.3	102.0	107.5	114.3	113.1
March	126.6	113.0	103.8	107.6	117.2	117.5
June	125.9	116.0	103.0	111.5	118.4	117.8

Australian Export Price Index

This index has fixed-weights, its purpose being to provide monthly comparisons over a limited number of years of the level of export prices of the selected items, making no allowance for variations in quantities exported. The index numbers are thus measures of price change only. The price series used in the index relate to specific standards for each commodity and in most cases are combinations of prices for a number of representative grades, types, etc. For some commodities, price movement in the predominant market, or markets, are used, while for other commodities average realisations in all export markets are used. As nearly as possible, prices used are on the basis f.o.b. at the main Australian ports of export.

At present a comprehensive review of the composition and weighting of the index is being undertaken. An interim series, using weights based on the values of 1969-70 exports has been published from June 1969. The interim series contains four new items (iron ore, bauxite, alumina and mineral sands) which have been incorporated in the all groups index. In the next table index numbers for 1969-70 and later are not strictly comparable with those for earlier years.

Export Price Index Numbers: Australia
(Base of Each Index: Year 1959-60=100)

Period	Wool	Meats	Dairy Pro- duce	Cereals	Dried and Canned Fruits	Sugar	Hides and Tallow	Metals and Coal	Gold	All Groups
1959-60	100	100	100	100	100	100	100	100	100	100
1967-68	95	125	79	109	95	67	67	120	104	100
1968-69	99	131	72	104	97	72	73	123	117	102
1969-70	87	148	73	96	p99	93	r94	r143	r109	(a)p103
1970-71	67	152	88	100	p102	p113	94	139	109	p101
1970-71										
Sept.	71	144	81	95	p100	115	97	141	104	p100
Dec.	65	146	87	97	p100	102	97	138	108	p98
Mar.	64	156	89	106	p105	p118	92	135	112	p101
June	65	158	107	104	p105	p113	91	136	115	p102

(a) In addition to the specified groups the 'All Groups Index' includes iron ore, bauxite, alumina and mineral sands.

WAGES

Basic Wage in Tasmania

General

The present position is as follows: wages fixed by Tasmanian State Wages Boards still consist of two parts, namely a *basic wage* and a *margin*; wages fixed by the Commonwealth Conciliation and Arbitration Commission are expressed as a *total wage*, the basic wage concept having been abolished in Commonwealth awards in 1967. All State industrial authorities with the exception of Victoria's have also retained the basic wage concept. A fuller history of the basic wage will be found in the 1970 *Year Book*.

Male Basic Wage Rates from 1953

The following table has been compiled to show the Commonwealth basic wage rates operating in Australian capital cities before the decision of 5 June 1967 (when the basic wage concept was eliminated from Commonwealth awards):

Commonwealth Basic Wage: Weekly Rates, Adult Males
(£)

Date Operative (a)	Sydney	Melb- ourne	Brisbane	Adelaide	Perth	Hobart	Six Capital Cities
August 1953 ..	24.30	23.50	21.80	23.10	23.60	24.20	23.60
June 1956 ..	25.30	24.50	22.80	24.10	24.60	25.20	24.60
15 May 1957 ..	26.30	25.50	23.80	25.10	25.60	26.20	25.60
21 May 1958 ..	26.80	26.00	24.30	25.60	26.10	26.70	26.10
11 June 1959 ..	28.30	27.50	25.80	27.10	27.60	28.20	27.60
7 July 1961 ..	29.50	28.70	27.00	28.30	28.80	29.40	28.80
19 June 1964 ..	31.50	30.70	29.00	30.30	30.80	31.40	30.80
11 July 1966 ..	33.50	32.70	31.00	32.30	32.80	33.40	32.80

(a) Rates operative from the beginning of the first pay-period commencing in the month shown or commencing on or after the date shown.

Female Basic Wage Rates from 1953

The following table summarises the Commonwealth basic wage applicable to females from 1953. Prior to 1950, female basic wage rates had been approximately 54 to 56 per cent of male rates but the Court of Conciliation and Arbitration in its judgment in December of that year fixed the relativity at 75 per cent.

Commonwealth Basic Wage Rate, Hobart: Adult Females
(£)

Date Operative (a)	Weekly Rate	Date Operative (a)	Weekly Rate	Date Operative (a)	Weekly Rate
Aug. 1953 ..	18.15	21 May 1958 ..	20.00	19 June 1964 ..	23.55
June 1956 ..	18.90	11 June 1959 ..	21.15	11 July 1966 ..	25.05
15 May 1957 ..	19.65	7 July 1961 ..	22.05	5 June 1967 ..	(b)

(a) Rates operative from the beginning of the first pay-period commencing in the month shown or commencing on or after the date shown.

(b) Abolition of Federal basic wage; see later section headed 'Equal Pay Legislation'.

State Basic Wage Rates

The following table shows how State wage authorities dealt with the basic wage abolition in Commonwealth awards in June 1967:

**State Basic Wage Rates Prior to and After Abolition of Commonwealth
Basic Wage**
(£)

Date of Operation (a)	Adult Males	Adult Females	Date of Operation (a)	Adult Males	Adult Females
TASMANIAN BASIC WAGE: HOBART					
1966 11 July ..	33.40	25.05	1969 19 December	36.80	28.20
1967 1 July ..	34.40	26.05	1971 1 January ..	39.00	29.90
1968 25 October ..	35.75	27.40			

**State Basic Wage Rates Prior to and After Abolition of Commonwealth
Basic Wage—continued
(\$)**

Date of Operation (a)	Adult Males	Adult Females	Date of Operation (a)	Adult Males	Adult Females
NEW SOUTH WALES BASIC WAGE: SYDNEY					
1966 11 July ..	33.50	25.10	1968 25 October ..	35.85	27.45
1967 1 July.. ..	(b)	(b)	1969 19 December ..	36.90	28.30
1968 1 January ..	34.50	26.10	1971 1 January ..	39.10	30.00
QUEENSLAND BASIC WAGE: BRISBANE					
1966 23 May ..	32.70	24.55	1968 28 October ..	35.55	27.25
1967 10 April ..	33.20	24.90	1969 22 December ..	36.65	28.05
3 July.. ..	(b)	(b)	1971 4 January ..	38.85	29.75
SOUTH AUSTRALIAN LIVING WAGE: ADELAIDE					
1966 11 July ..	32.30	24.20	1969 22 December ..	(b)	(b)
1967 3 July.. ..	33.30	25.20	1971 4 January ..	37.85	29.00
1968 28 October ..	34.65	26.55			
WESTERN AUSTRALIAN BASIC WAGE: PERTH					
1966 2 August ..	33.26	24.95	1968 22 November ..	35.45	27.08
1966 24 October ..	33.50	25.13	1969 24 November ..	36.45	27.88
1967 1 July.. ..	(b)	(b)	1970 26 October ..	38.45	29.40
1968 25 October ..	(b)	(b)			
VICTORIAN BASIC WAGE: MELBOURNE (c)					
1966 11 July ..	32.70	24.50	1967 1 July.. ..	(d)	(d)

(a) Rates operative from the first pay-period commencing on or after the date shown.

(b) Special loadings (N.S.W., \$1; Qld, \$1; S.A., 3 per cent; W.A., \$0.60 from 1.7.67 and a further \$1.35 from 25.10.68) were added to award rates but later absorbed into the basic wage.

(c) From 1 July 1967 Victoria adopted the amounts and formulae prescribed in Commonwealth awards for general adjustments of total wages.

(d) Basic wage and margins deleted from determinations; subsequently rates expressed as total wages.

Minimum Wages

The Commonwealth Conciliation and Arbitration Commission announced in its decision of 8 July 1966 that it intended to grant relief to low wage earners by inserting a provision prescribing a minimum wage. It ordered that the minimum male wage paid under the Metal Trades Award should be the appropriate basic wage plus \$3.75 a week (e.g. in Tasmania a basic wage of \$33.40 plus \$3.75 giving a minimum wage of \$37.15).

Tasmanian Wages Boards introduced the concept of the minimum wage into their determinations in June 1967. Weekly minimum wage rates prescribed in Commonwealth and State awards are shown in the following table:

**Minimum Wages, Adult Males: Commonwealth Commission and Tasmanian State
Wages Boards
(\$)**

Date Operative	Commonwealth Awards	Tasmanian State Wages Boards Determinations
11 July 1966	37.15	
1 July 1967	38.15	38.15
25 October 1968	39.50	40.45
19 December 1969	43.00	43.00
1 January 1971	47.00	47.00

Wage Margins in Tasmania

General

Wage margins have been defined as 'minimum amounts awarded above the basic wage to particular classifications of employees for the features attaching to their work which justify payments above the basic wage, whether these features are the skill or experience required for the performance of that work, its particularly laborious nature, or the disabilities attached to its performance' (*Commonwealth Arbitration Report*, Vol. 80).

Marginal rates of wages were determined both by Commonwealth and State industrial tribunals (in Tasmania, by State Wages Boards) before an award of the Commonwealth Conciliation and Arbitration Commission in June 1967 introduced a new industrial concept, *the total wage*, in Commonwealth awards. In the Commonwealth jurisdiction, prior to 1954, the Commonwealth Court of Conciliation and Arbitration had not made any general determination in respect of wage margins, but general principles of marginal rate fixation had been enunciated by the Court in the *Engineers' Case* of 1924, the *Merchant Service Guild Case* of 1942 and the *Printing Trades Case* of 1947. Major determinations affecting margins were made in the Commonwealth jurisdiction in 1954, 1959, 1963 and 1965 (the 1965 hearing resulted in a determination affecting margins generally even though conceived originally by the claimant trade unions as concerned purely with basic wage issues). The decisions of the Commonwealth Court (and later of the Commonwealth Conciliation and Arbitration Commission) have generally been followed by State industrial tribunals in the determination of margins in State awards. The Tasmanian State Wages Boards have undoubtedly been influenced in their margins determinations by those made in the Commonwealth jurisdiction, although an independent policy has sometimes been pursued (e.g. special fifteen per cent marginal increases for certain tradesmen in the State sphere in 1963, as opposed to ten per cent increases granted in the Commonwealth jurisdiction).

Margins were eliminated from Federal awards with the introduction of the *total wage concept* in June 1967. (For a summary of major margin cases see the 1968, 1969 and 1970 *Year Books*.)

Metal Trades Work Value Award

Decision of December 1967

The margins cases of 1954, 1959 and 1963, although argued originally for Metal Trades employees, had nevertheless been used as a precedent for higher rates for most workers. In 1966, the Commission dealt with a Metal Trades margins case, which was, as usual, argued principally on general economic grounds. In July, its decision was to grant no immediate marginal increases, but to start an investigation of Metal Trades margins from the



Mt Solitary with Maria Creek in the foreground

(Dept of Film Production)



Victoria Bridge, Devonport, June 1971

(P.W.D.)

work value aspect. This involved comparing the rates for each classification within the award, one with another, and also with rates outside the award; its aim was to put a value on the type of work performed by Metal Trades workers in individual classifications. Later in the same year (December), the Commission gave an interim decision stipulating percentage increases in the total wage.

The work value decision was handed down on 11 December 1967 following lengthy investigations. It awarded substantial increases to some classifications specified in the Metal Trades award (e.g. fitter's rate advanced by \$7.40); it gave no specific direction on over-award payments but suggested that they might be absorbed to some extent in the new award rates. Unlike Metal Trades awards resulting from *economic cases*, this award did not create a precedent capable of general application, and tradesmen in other fields were warned that they would need to argue *work value cases* for the individual classifications in their particular industries.

Over-award Payments

Before the award of December 1967, many Metal Trades employers were paying rates higher than the minima fixed by the Commission. After the award, their problem was whether to increase existing payments by the exact increment determined by the Commission, or whether to reduce over-award payments (known as 'absorption'). The industrial disputes that followed were concerned not so much with the new minimum wages but rather with maximum wages (and on these the Commission had given no ruling). Three months after the award, the employers appealed to the Full Bench of the Commission and put forward the following alternatives: (i) cancellation of the new rates; (ii) a ruling as to absorption; (iii) the assessment of the new rates as maximum rates; and (iv) lower rates without the assumption of absorption.

Decision of February 1968

On 21 February, the Full Bench gave its decision, the chief clause reading 'We have decided that 70 per cent of the prescribed increases . . . of the award shall be payable in accordance with the decision of December 11 and that 30 per cent shall be deferred.' However, December increases of less than \$1.60 were not to be varied, and no December increases greater than \$1.60 were to be reduced below this amount.

On the absorption issue, the Bench rejected the employers' application for absorption, but accepted the possibility that some absorption might be inescapable.

The Full Bench was unwilling to vary the December increases. It also decided that the matter of the deferred 30 per cent part of the increase, could be reviewed in August.

The Full Bench again emphasised the difference between *economic cases* and *work value cases* stating that those who constitute benches dealing with work value cases in other awards should arrive at their decisions without being bound to follow what had happened in the Metal Trades award.

Decision of August 1968

In August 1968, the Commonwealth Arbitration Commission decided that the 30 per cent segment deferred in its February award should be paid in the first pay period on or after 21 August.

Decision of Tasmanian Wages Board, March 1968

Test Case: On 5 February 1968, the Electrical Engineers' Wages Board met to hear claims based on the Metal Trades work value decision given in the Federal jurisdiction on 11 December 1967. This Board's deliberations were

adjourned and a wider conference was convened so the matter under review could be treated as a test case for all Metal Trades classifications in the State jurisdiction.

The essence of the claim was: (i) electrical tradesmen with \$13.90 margins should receive a \$7.40 increase (fitters in the Federal jurisdiction had received a \$7.40 increase in the December decision); and (ii) the minimum margin in the determination should not be less than \$7.20.

Argument: The employers argued that acceptance of the claim as it stood would perpetuate a differential between Tasmanian and Federal rates; there might have been justification for a differential in the past but this had disappeared because the December Federal rates had been established by a work value enquiry. The Federal rates should be accepted unless an independent work value enquiry was held in the State jurisdiction.

Determination: The Chairman's recommendation, given on 14 March 1968, was to vary the determination as follows: (i) increase by \$5.80 the margin paid to highly skilled tradesmen covered by the award; (ii) increase less skilled classifications by smaller amounts, e.g. \$0.25 for an electrical fitter's assistant; and (iii) increase apprentices' rates.

The claim for the full \$7.40 was rejected, the Chairman stating that the differential between the Federal and State margins for tradesmen was an interim adjustment against the long awaited re-assessment of the tradesman's margin in the Federal Metal Trades Award.

The determination in the test case was later used as a basis for variation of rates in determinations of a number of Wages Boards including Plumbers', Automotive Industry, Marine Boards, Emu Bay Railway, Mechanical Engineers and Founders, Electrolytic Zinc, etc.

It will be noted that the quantum of increase granted (\$7.40) was reduced to \$5.20 in the Federal award of February 1968; so, in actual fact, the State test case did not have the effect of reducing the differential between Tasmanian and Federal rates. The award of 6 August, by restoring the \$7.40 increase, had the effect of bringing Commonwealth and State margins to the same level.

The movement in the two jurisdictions is shown in the following table:

Tasmanian and Federal Jurisdictions: Key Tradesmen's Margins (\$)

Date of Award or Determination (a)	Federal Award: Margin of Fitter	Tasmanian Deter- mination: Margin of Electrical Fitter
Prior to Award of 11 December 1967 ..	12.30	13.90
Award of 11 December 1967	19.70	..
Award of 21 February 1968	17.50	..
Determination of 14 March 1968 .. ..	..	19.70
Award of 6 August 1968	19.70	..
Increase	7.40	5.80

(a) Date of giving decision, not the effective date for payment of new rate.

Review of Margins 1970

Test Case: A number of applications were made during 1970 for review of margins paid to tradesmen and in October the Minister convened a meeting of the Electrical Engineers' Wages Board to hear the case. The meeting was adjourned until November and reconvened as a test case covering all tradesmen.

The electrical tradesmen claimed a weekly increase of \$15 in margins while representatives for all other tradesmen requested a \$10 margin increase.

Argument: The claim was based on: (i) the high academic qualifications and degree of skill necessary to gain entry to the trade; and (ii) the necessity to restore parity with rates for electrical tradesmen falling under the jurisdiction of other wage fixing authorities.

The claim for increasing the margins for other tradesmen was based on the erosion of margin values following increases awarded to unskilled and semi-skilled occupations. The employers agreed that the value of margins for tradesmen had been reduced, but they objected to the magnitude of the increases claimed.

Determination: In the determination it was accepted that: (i) the value of margins paid to tradesmen compared to increases granted to unskilled and semi-skilled occupations should be maintained; and (ii) where high qualifications were required for entry to a trade, then the holder should be adequately rewarded.

The determination of 10 November increased existing margins for 'base tradesmen' and higher classifications, under the jurisdiction of the Electrical Engineers' Wage Board, by 27 per cent. No increase was granted to unskilled and semi-skilled trades. This determination gave tradesmen on the lowest margin (\$20.30) an increase of \$5.50. The increases became effective from the first pay period commencing on or after 14 October 1970.

The November Test Case decision was then used as a basis for varying tradesmen's margins in determinations of other Wages Boards including Plumbers', Automotive Industries, Marine Boards, Bakers', etc.

Total Wage Concept

General

Full details of the 'Total Wage Concept' are given in the 1970 *Year Book*. The following briefly describes its evolution from 1965:

- 1965 The Commission heard and rejected an employers' claim for fixation of a total wage to replace the traditional two-element wage made up of basic wage and margin.
- 1966 Another employers' claim was heard for fixation of a total wage and the Commission did not reject the concept as such. However, its awards for that year were made in terms of basic wage and margins. A new development was the Commission's prescription of a *minimum* wage under the Metal Trades Award, which was defined as \$3.75 above the basic wage.
- 1967 The Commission abolished the basic wage concept and gave its award as a single figure, i.e. in terms of a total wage; the increase awarded was \$1.00 to be added to total award rates.
- 1968 The Commission resisted the unions' case for restoration of the basic wage and awarded a \$1.35 increase in total award rates.
- 1969 The Commission's award provided for a three per cent increase in total award rates.
- 1970 Seven applications from the private and public sector constituted the 1970 National Wage Case. The unions representing blue collar workers claimed a \$9.00 increase in both the total and minimum

wage and the restoration of quarterly cost of living adjustments. Unions representing white collar workers claimed a sixteen per cent increase in the total and minimum wage.

Employer organisations offered a flat two per cent increase in both the total and minimum wage.

In its judgement handed down on 14 December 1970 the Commission granted a flat six per cent increase in total wage and increased the minimum wage by \$4.00 per week. The effect in Hobart was to make the prescribed minimum rate \$47.00 per week.

The Commission rejected the unions' claim for the restoration of quarterly cost of living adjustments.

Sex Differentiation: In the awards from 1966 to 1970 just described, the Commission drew no distinction between male and female rates.

Total Wage Concept in Tasmania

The Commonwealth award of June 1967 was followed by a test case argued before the Chairman of the State Wages Boards. The employers asked for adoption of the total wage concept. The unions opposed this and argued for a \$7.30 increase in the basic wage; if a lesser amount was determined, then a *minimum total wage* of \$40.70 should nevertheless be fixed.

The decision in the test case (Electrical Trades) was that both male and female rates should be increased by \$1; the increase, however, should be regarded as *raising the basic wage* which would be retained for the present in State determinations. In the National Wage Case of October 1968, the *total wage concept* was again upheld but State Wages Boards did not follow the Federal lead; the basic wage was retained in State determinations, expressed as \$35.75 (male) and \$27.40 (female).

Following the 1969 National Wage Case, the Ironmongers' Wages Board was convened and the hearing took the form of a test case for the other Wages Boards. In the determination handed down on 19 December 1969, the chairman of the Ironmongers' Wages Board rejected the employers' claims for the abolition of the basic wage and margins, and the introduction of a total wage. The basic wages for adult males and females were increased to \$36.80 and \$28.20 respectively and margins in awards were increased by three per cent, (i.e. a three per cent increase was applied to both the basic wage and margins achieving the same result as obtained in the Commonwealth case).

In January 1970 the Produce Wages Board was convened to determine variations to State Wages Boards rates following the 1970 National Wage Case decisions. The case was heard under the 'common rule provisions' of the *Wages Boards Act* 1970. The Board's decision was to: (i) increase the weekly basic wage for adult males to \$39.00 (an increase of \$2.20 or six per cent) and for females to \$29.90 (an increase of \$1.70 or six per cent); (ii) increase margins by six per cent; and (iii) set the minimum weekly wage for adult males at \$47.00. These variations became effective from the first pay period commencing on or after 1 January 1971. Since the case was heard under the 'common rule provisions', the determination applied to all awards subject to State Wages Boards' jurisdiction.

Equal Pay Legislation

Introduction

The concept of 'equal pay' achieved partial recognition in some Australian States because there exist occupations in which men and women perform work which is identical (e.g. teaching, medical practice, etc.); such identity has given birth to industrial claims based on the principle of 'equal pay for

equal work'. The logic of such occupational situations was ignored in the past and it was only in 1950 that the Commonwealth Court of Conciliation and Arbitration fixed the female basic wage at 75 per cent of the male rate (it had previously been as low as 54 or 56 per cent). With regard to margins, there was universal rule but, in the Commonwealth Public Service, for example, certain female employees received the same margin as males, but only the female basic wage.

N.S.W. Legislation (1959)

The first acceptance of the principle of equal pay for equal work came in N.S.W. in 1959 when the Industrial Arbitration Act was amended to provide equal pay for males and females under certain circumstances. If the Industrial Commission or a Conciliation Committee was satisfied that male and female employees under an award were performing identical work, it was to prescribe the same margin for males and females. The basic wage was to be adjusted to equal the male rate in annual five per cent increments spread over the period 1959-1963.

Tasmanian Legislation (1966)

Employees in both the private and public sectors (excluding those in Commonwealth employment or under Commonwealth awards) were covered by the N.S.W. legislation. In Tasmania, the approach to the problem was different in that the Parliament in 1966 passed legislation affecting only employees in the public sector. The *Public Service (Equal Pay) Act* 1966 applies to those employed by the State Government or employed by State authorities, e.g. the teaching service, the police force, the railway service, etc. The Act requires that wage-fixing authorities must first be satisfied in any application, that certain female employees are performing 'work of the same or a like nature and of equal value'. If this is established, then the authority is required to fix the same margins for all employees, irrespective of sex. This still does not give equal pay due to the lesser female basic wage. Accordingly the Act provides for annual five per cent increments in the female basic wage (80 per cent of the male basic wage from January 1968, 85 per cent from January 1969 and so on with equality reached in 1972).

The wage-fixing authorities specified in the Act include Wages Boards, the Public Service Tribunal, the Public Service Commissioner and any other person or body required to act as such by law. In actual practice, the majority of claims for an award variation will be made to the Public Service Tribunal, the principal wage-fixing authority for employees in the public sector.

National Wage Cases

In awarding the \$1 increase to both males and females in 1967, the Commonwealth Conciliation and Arbitration Commission departed from the principle of maintaining a 75 per cent ratio between the male and female basic wage. This was done deliberately and the Commission's pronouncement in June 1967 referred to the eventual possibility of equal pay for equal work.

The 1968 award of the Commonwealth Commission, handed down on 4 October, gave an *equal increase* to both males and females; all award wages were increased by \$1.35. The 1969 and 1970 National Wage Cases both resulted in uniform percentage increases to be applied to total wage rates (3 per cent, 1969; 6 per cent, 1970); female workers on lower rates therefore received smaller *actual increases* than males.

Teachers' Case, 1968

In June 1968, the Public Service Tribunal gave a ruling affecting Tasmanian women teachers employed by the State Government; it held that they were doing work of the same or a like nature and of equal value. In general, women teachers were already receiving the same margins as men so the effect of the Tribunal's decision was to increase the base rate component of their salary to 80 per cent of the male base rate, with effect from 23 May 1968. (A teacher's weekly salary in June 1968 had three components: (i) base rate, \$33.40 male or \$25.05 female; (ii) \$1 loading, male and female; and (iii) margin. The female base rate, \$25.05, was 75 per cent of the male base rate, \$33.40.) In accordance with the Act, the base rate for females will be steadily advanced until it equals the male rate in 1972.

State Employees Receiving Equal Pay

Since the May 1968 Teachers' determination, equal pay has been extended to all areas where the Public Service Tribunal has been satisfied that the work performed by male and female employees is of the same or similar nature and of equal value.

National Equal Pay Case 1969

Two benches of the Conciliation and Arbitration Commission handed down a joint decision on the National Equal Pay Case on 19 June 1969. The decision was important as, for the first time, the Commission accepted in principle the concept of 'equal pay for equal work'. However, equal pay is not to be granted automatically; equality of work must be proved before an increase will be granted to female workers.

Conclusions: Acceptance of the concept of 'equal pay for equal work', implied the elimination of discrimination based on sex alone. Granting the claim was intended to be no more than a first step towards the application of a principle, and the equality of the work had first to be determined before an increase to females could be awarded.

Principles to be applied: The Commission stated that it would be necessary for a separate examination to be made of each determination and award in respect of the awarding of equal pay, and suggested that certain clearly defined principles should be applied in deciding these applications.

Where the Arbitrator or the Commissioner is satisfied that equal pay should be awarded, the Commission considered that the implementation of such a decision should be on a progressive basis over four years as follows (provided that no female rates should be reduced by operation of this formula):

Equal Pay Case Decision, 19 June 1969

Date of Operation	Amount of Female Rate
Beginning of first pay period to commence on or after—	
1 October 1969	85%
1 January 1970	90%
1 January 1971	95%
1 January 1972	100%
	} of the male rate at that date

Equal Pay: Metal Trades Award

In February 1970 the Commonwealth Conciliation and Arbitration Commission granted equal pay to adult female process workers employed under the Commonwealth Metal Trades Award. The determination was that: (i) from the first pay period commencing on or after 23 February 1970 wage

rates for adult females would be 90 per cent of the adult male rates; (ii) from 1 January 1971 rates would be 95 per cent of male rates; and (iii) from 1 January 1972 adult female rates would be the same as adult male rates. The Commission rejected an employees' appeal against this decision which did not give equal pay immediately. On 25 March 1970 trade unions and employers agreed to extend the equal pay provisions to junior females employed under the Metal Trades Award.

The arguments presented and the principles to be applied when establishing an equal pay situation are given in the 1970 *Year Book*.

Weekly Wage Rates in Tasmania

Definitions

In this section, 'weekly wage rates' is used as a short title for 'weighted average minimum weekly wage rates'. The rates are those applicable to adult males and adult females, and are those fixed in *awards*.

The minimum wage is the lowest rate payable for a particular occupation, and for most occupations it comprises the basic wage and 'secondary' wage payments, i.e. additional amounts such as margins for skill, etc. and loadings of various kinds. In the majority of cases such rates are prescribed in awards or determinations of Commonwealth or State industrial authorities or in agreements registered with them. Some rates are prescribed in unregistered agreements between employers and employees. The decision of the Arbitration Commission (June 1967) to end the basic wage does not affect the compilation, the basic data still being minimum award wages for individual occupations. The position at the end of December 1970 was that the basic wage was retained in the awards of all States except Victoria, but no longer prescribed in the awards of the Commonwealth.

Weighting: To arrive at a weighted average rate for a particular field (e.g. rate for occupations in Tasmania covered by Commonwealth awards) certain data are required. The basic initial information is the award rate applying to each occupation and its relative significance (broadly, the numbers in each occupation). The calculation of average minimum rates is based on the occupational structure existing in 1954.

The individual minimum wage rates, combined to give the averages shown in the tables, are those for representative occupations within each industry.

Since the aim is to measure movements in prescribed minimum rates of 'wages' as distinct from 'salaries', those awards, etc. which relate solely or mainly to salary-earners are excluded.

Weighted averages of the components of the total minimum weekly wage rate, i.e. basic wage, margin and loading, are calculated separately for adult male employees covered by Commonwealth awards, etc., and for those covered by State awards, etc.

'Commonwealth Awards, etc.': These include awards of, or agreements registered with, the Commonwealth Conciliation and Arbitration Commission, and determinations of the Commonwealth Public Service Arbitrator.

'State Awards, etc.': These include awards or determinations of, or agreements registered with, State industrial tribunals, together with certain unregistered agreements, where these are dominant in the particular industries to which they refer. (In Tasmania, the principal tribunals are the State Wages Boards.)

'*Basic Wage Rates*': These are weighted averages of the weekly rates prescribed in awards, etc. for the occupations included in the calculation. For industries other than mining, metropolitan basic wage rates have generally been used. However, there are a number of occupations for which basic wage rates other than the metropolitan rate are prescribed. In all such cases, the basic wage rate actually paid is used in the tables. As a result, the weighted average basic wage shown in this section differs from the Hobart basic wage appearing elsewhere.

'*Margins*': These are minimum amounts, in addition to the basic wage, awarded to particular classifications of employees for special features such as skill, experience, arduousness or other like factors.

'*Loadings*': These include industry loadings and other general loadings prescribed in awards, etc. for the occupations included in the calculation. Loadings that are not applicable to all workers in a specified award occupation (for example, those payable because of length of service; working in wet, dirty or confined spaces, etc.) are not included in the calculation.

Male and Female Rates

The following table summarises weekly wage rates for adult males and adult females in Tasmania from 1955 onwards. The averages include Commonwealth and State awards, etc. and are for all industry groups combined.

Weighted Average Minimum Weekly Wage Rates (a)
Adult Males and Adult Females: All Groups

(\$)

End of December—	Adult Rate		End of December—	Adult Rate	
	Male	Female		Male	Female
1955.. ..	29.36	20.00	1963.. ..	37.29	25.21
1956.. ..	31.39	21.52	1964.. ..	39.69	27.04
1957.. ..	31.85	21.90	1965.. ..	40.73	27.94
1958.. ..	32.36	22.12	1966.. ..	43.27	29.80
1959.. ..	34.71	23.42	1967.. ..	45.31	31.62
1960.. ..	35.15	23.88	1968.. ..	48.98	33.46
1961.. ..	36.27	24.82	1969.. ..	52.00	36.94
1962.. ..	36.48	24.83	1970.. ..	54.38	38.13

(a) Weighted average minimum weekly rates payable for a full week's work (excluding overtime) as prescribed in awards, determinations, etc.

Limitation: The wage rates shown in the tables in this section should not be regarded as actual current averages, but rather as indexes expressed in money terms, indicative of trends. The wage rates do not measure the relative level of minimum wages as between States.

Minimum weekly wage rates for adult males are not comparable with 'average weekly earnings per employed male unit' appearing in a later section of this chapter; the latter includes not only the earnings of adult wage-earners but also those of salaried employees, junior wage-earners and part-time and casual employees, included also are over-award payments and overtime earnings.

Rates in Industry Groups

In the next table, details are shown of Tasmanian weighted average minimum weekly wage rates payable for a full week's work (but excluding overtime) for adult males and females as prescribed in awards, determinations, etc. of the various industry groups; also the same information converted to

index numbers with the Australian weighted average minimum weekly wage rate for 1954 equated with 100. It should be noted that the figures shown in this table are statistical averages and should not be confused with the *minimum wage* prescribed by the Commonwealth Conciliation and Arbitration Commission.

**Weighted Average Minimum Weekly Wage Rates and Index Numbers
Adult Males and Adult Females: Industry Groups, 31 December 1970**

Industry Group	Adult Males		Adult Females	
	Rates of Wage (\$)	Index Numbers (a)	Rates of Wage (\$)	Index Numbers (a)
Mining and Quarrying	60.94	215.8	..	..
Manufacturing—				
Engineering, Metals, Vehicles, etc. ..	54.07	191.4	39.60	198.9
Textiles, Clothing and Footwear ..	48.33	171.1	34.11	171.3
Food, Drink and Tobacco	51.00	180.6	36.54	183.6
Sawmilling, Furniture, etc.	48.94	173.3	..	..
Paper, Printing, etc.	52.35	185.4	..	..
Other Manufacturing	50.02	177.1	..	..
All Manufacturing Groups	51.70	183.1	35.65	179.1
Building and Construction	55.61	196.9	..	..
Railway Services	52.73	186.7	..	..
Road and Air Transport	54.71	193.7	..	..
Shipping and Stevedoring	60.38	213.8	..	..
Communication	67.61	239.4	..	..
Wholesale and Retail Trade	53.33	188.8	39.67	199.3
Public Authority (n.e.i.) and Community and Business Services	58.83	208.3	42.10	211.5
Amusement, Hotels, Personal Service, etc. . .	47.86	169.4	36.18	181.8
All Industry Groups	54.38	192.5	38.13	191.5

(a) Base of index numbers: weighted average minimum weekly wage rate, Australia, 1954=100.0.

Index Numbers

In the previous table, the minimum average weekly wage rates have also been expressed as index numbers. It should be emphasised that the rates themselves are not actual current averages but are rather indexes expressed in money terms; as such they are indicative of trends rather than of levels.

The following table shows, in summary form, the index numbers for adult male and adult female weighted average minimum weekly wage rates in Tasmania from 1964:

**Weighted Average Minimum Weekly Wage Rates: Index Numbers, All Groups
Adult Males and Adult Females**

End of December—	Index Numbers (a)		End of—	Index Numbers (a)	
	Male	Female		Male	Female
1964.. .. .	140.5	135.8	1969—December ..	184.1	185.6
1965.. .. .	144.2	140.4	1970—March ..	185.0	187.4
1966.. .. .	153.1	149.7	June ..	186.4	187.4
1967.. .. .	160.4	158.8	September ..	188.8	189.1
1968.. .. .	173.4	168.1	December ..	192.5	191.5

(a) Base of index numbers: weighted average weekly wage rate, Australia, 1954=100.0.

Components of Weekly Wage Rates (Male)

The next table shows the adult male weighted average minimum weekly rate, according to its Commonwealth and State award elements, for Tasmania. The State award element is shown in its component parts (basic wage, margin and loading). However, adoption of the total wage concept in June 1967 precludes a similar dissection of Commonwealth awards (Commonwealth awards prior to June 1967 are also shown in total only).

Weighted Average Minimum Weekly Wage Rates, End of December (a)
Components of Wage Rate, All Groups: Adult Males
 (\$)

Particulars	1965	1966	1967	1968	1969	1970
Commonwealth Awards ..	40.21	42.71	44.58	48.46	51.48	53.56
State Awards, etc.—						
Basic Wage ..	31.39	33.39	34.40	35.75	36.80	36.80
Margin ..	8.86	9.13	10.15	12.05	13.93	16.39
Loading ..	1.27	1.61	1.88	1.97	2.07	2.46
Total ..	41.52	44.14	46.43	49.77	52.80	55.64
All Awards ..	40.73	43.27	45.31	48.98	52.00	54.38

(a) For a full week's work (excluding overtime) as prescribed in awards, determinations, etc.

Australian Rates

In the next table, rates and index numbers are shown for each Australian State:

Australia: Weighted Average Minimum Weekly Wage Rates (a)—All Groups
Adult Males

End of December	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Australia
-----------------	--------	------	-----	------	------	------	-----------

RATES OF WAGES (\$)

1965	41.08	40.34	41.66	39.48	40.49	40.73	40.76
1966	43.27	42.78	43.56	41.75	43.37	43.27	43.04
1967	r 45.35	44.59	45.55	r 43.79	45.08	45.31	45.00
1968	49.46	48.86	49.01	48.23	47.72	48.98	48.98
1969	52.38	r 51.74	51.91	r 50.76	50.69	52.00	r 51.86
1970	54.15	53.47	55.03	52.05	55.93	54.38	54.02

INDEX NUMBERS (b)

1965	145.5	142.8	147.5	139.8	143.4	144.2	144.3
1966	153.2	151.5	154.2	147.8	153.6	153.1	152.4
1967	r 160.6	157.9	161.3	r 155.1	159.6	160.4	r 159.3
1968	175.1	173.0	173.5	170.8	169.0	173.4	173.4
1969 r	185.5	183.2	183.8	179.5	179.5	184.1	183.6
1970	191.7	189.3	194.8	184.3	198.0	192.5	191.3

(a) For a full week's work (excluding overtime), as prescribed in awards, determinations, etc.

(b) Base of index numbers: weighted average minimum weekly wage rate, Australia, 1954=100.0.

Hourly Wage Rates in Tasmania

General

Hourly wage rates is the short title for 'weighted average minimum hourly rates payable'. The concept is completely analogous to that embodied in weighted average minimum weekly wage rates and the calculation is similarly based on rates prescribed in awards or determinations of Commonwealth and State industrial authorities or in agreements registered with them.

Definitions

Hours of Work: In the fixation of weekly wage rates, most industrial tribunals prescribe the number of hours constituting a full week's work for the wage rates specified. The hours of work so prescribed form the basis of the compilation of the weighted averages of hourly rates.

Rural industry is excluded from the calculation of weighted average minimum weekly wage rates. Rural industry, and in addition the shipping and stevedoring industry, are excluded from the calculation of weighted average minimum hourly wage rates; the shipping and stevedoring group is excluded since definite particulars for the computation of hourly wage rates are not available.

The 40-hour week has operated in Australia generally from 1 January 1948 (N.S.W., from 1 July 1947). Nevertheless the number of hours constituting a full week's work (excluding overtime) differs between occupations and/or States. The weighted average standard hours of work (excluding overtime) prescribed in awards, determinations and agreements for a full working week, in respect of adult male workers in all industry groups except rural, and shipping and stevedoring, at 30 June 1970, were: N.S.W., 39.86; Victoria, 39.97; Queensland, 39.94; S.A., 39.96; W.A., 39.85; Tasmania, 39.95; Australia, 39.91. Corresponding figures for adult female workers at 30 June 1970, were: N.S.W., 39.53; Victoria, 39.81; Queensland, 39.70; S.A., 39.77; W.A., 39.78; Tasmania, 39.63; Australia, 39.67.

Weekly Wage Rate Definitions: Apart from exclusion of the shipping and stevedoring industry, the definitions in the section headed 'weekly wage rates' apply with equal force to the calculation of hourly wage rates.

Summary of Details

The following table shows, for Tasmania, weighted average minimum hourly wage rates for adult male and adult female workers in all industries (except rural, and shipping and stevedoring) since 1939:

**Weighted Average Minimum Hourly Wage Rates, All Groups
Adult Males and Adult Females**

End of—	Males (a)	Females (b)	End of—	Males (a)	Females (b)
RATE OF WAGE (\$)					
December—1939 ..	0.2095	<i>n.a.</i>	December—1967 ..	1.1365	0.7979
1945 ..	0.2642	<i>n.a.</i>	1968 ..	1.2288	0.8444
1950 ..	0.4952	<i>n.a.</i>	September—1969 ..	1.2531	0.8950
1955 ..	0.7371	0.5056	December—1969 ..	1.2955	0.9323
1960 ..	0.8808	0.6037	March—1970 ..	1.3020	0.9415
1963 ..	0.9340	0.6361	June—1970 ..	1.3210	0.9415
1964 ..	0.9946	0.6822	September—1970 ..	1.3249	0.9499
1965 ..	1.0211	0.7052	December—1970 ..	1.3521	0.9622
1966 ..	1.0842	0.7520			

**Weighted Average Minimum Hourly Wage Rates, All Groups
Adult Males and Adult Females—continued**

End of—	Males (a)	Females (b)	End of—	Males (a)	Females (b)
INDEX NUMBERS (c)					
December—1939 ..	29.6	<i>n.a.</i>	December—1967 ..	160.6	159.0
1945 ..	37.3	<i>n.a.</i>	1968 ..	173.7	168.3
1950 ..	70.0	<i>n.a.</i>	September—1969 ..	177.1	178.4
1955 ..	104.2	100.8	December—1969 ..	183.1	185.8
1960 ..	124.5	120.3	March —1970 ..	184.0	187.7
1963 ..	132.0	126.8	June —1970 ..	184.6	187.7
1964 ..	140.6	136.0	September—1970 ..	187.3	189.3
1965 ..	144.3	140.6	December—1970 ..	191.1	191.8
1966 ..	153.2	149.9			

(a) All industry groups except rural, and shipping and stevedoring.

(b) All industry groups except rural, mining and quarrying, and building and construction.

(c) Base of index numbers: weighted average hourly wage rate, Australia, 1954=100.0.

Average Weekly Earnings in Tasmania

Source of Data

The figures in the following section are derived from particulars of employment and of wages and salaries recorded on pay-roll tax returns, from other direct collections and from estimates of the unrecorded balance. (In general, businesses with pay-rolls of less than \$1,734 per month are exempt from pay-roll tax and do not need to supply monthly details of employment and of wages and salaries.) Pay of members of the defence forces is not included.

Definitions

'Employed Male Unit': This is a special unit devised to overcome the difficulty that particulars of wages and salaries are not available separately for males and females. (The basic data available are the number of males, the number of females and the total pay-roll only.) The number of females is converted to a *lesser equivalent number* of males by taking into account the approximate ratio of female to male earnings; a divisor for deriving average 'male' earnings is then obtained by adding the actual number of males to the calculated number of 'male equivalents'. The divisor so obtained is called 'employed male units'.

From 1 September 1966, the series has been revised using separate ratios of male to female earnings for each State. (The ratio used for Tasmania is 49 per cent; for calculating Australian figures a weighted average of the six States of approximately 52.5 is used.)

Components of Pay-roll: Pay-roll includes, in addition to wages at award rates, the earnings of salaried employees, over-time earnings, over-award and bonus payments, and payments made in advance or retrospectively, (e.g. advances of annual leave pay). Included also are the wages and salaries, not only of adults, but also of juniors; the earnings may relate to full-time, part-time or casual workers.

Invalid Comparison: Average earnings per employed male unit cannot be compared with male weighted average minimum weekly wage rates shown in the previous section. Weighted average minimum weekly wage rates relate to award rates for adult male wage earners in non-rural industry for a full week's work, at the end of each month or year; the average weekly earnings per employed male unit are derived from the pay-roll concept shown in the previous paragraph, and obviously cover a wider field of earnings and of wage and salary earners.

Seasonal Influence: Quarterly figures are affected by seasonal influences. Comparisons as to trends are generally best made by relating complete years or corresponding periods of incomplete years.

Annual and Quarterly Details

The following table shows, for Tasmania, average weekly earnings per employed male unit; the figures are arranged both as quarterly and annual averages.

Average Weekly Earnings Per Employed Male Unit (a)
(£)

Year	Average for Quarter Ending—				Average for Year
	September	December	March	June	
1966-67 r	56.60	60.30	56.70	60.00	58.40
1967-68 r	60.20	64.30	60.10	63.10	61.90
1968-69 r	62.80	68.40	63.50	67.50	65.60
1969-70 r	68.80	73.90	66.30	74.30	70.80
1970-71	74.40	80.50	74.90	84.90	78.70

(a) For definitions, see earlier section headed 'Definitions'.

Australian Details

The next table shows average weekly earnings per employed male unit for each Australian State. *Precise* comparisons between average earnings per employed male units for different States depends upon a common ratio of male to female earnings for all States, however, the actual ratio used to calculate the earnings varies from State to State. Therefore precise comparisons between States cannot be made nor between the State figures and the Australian figures.

Australia: Average Weekly Earnings Per Employed Male Unit (a)
(£)

Period	N.S.W.(b)	Vic.	Qld	S.A. (c)	W.A.	Tas.	Australia
1955-56	37.90	37.80	33.00	35.90	33.90	35.60	36.70
1966-67 r	63.50	63.90	57.10	57.60	59.20	58.40	61.70
1967-68 r	67.00	67.60	60.20	61.10	63.90	61.90	65.30
1968-69 r	72.70	72.10	64.30	65.20	68.70	65.60	70.20
1969-70 r	78.80	78.10	69.20	70.90	75.50	70.80	76.10
1970-71 r	87.90	86.20	77.80	78.40	84.60	78.70	84.70
1968 June Qtr.	69.00	69.30	61.80	62.20	66.30	63.10	67.10
Dec. Qtr. r	75.30	74.00	66.10	66.60	69.70	68.40	72.30
1969 June Qtr.	75.20	74.60	67.30	66.60	71.20	67.50	72.60
Dec. Qtr. r	81.60	80.80	71.50	72.90	78.00	73.90	78.70
1970 June Qtr.	82.30	81.10	71.90	73.50	78.00	74.30	79.10
Dec. Qtr.	89.70	87.50	79.10	78.70	85.70	80.50	86.10
1971 June Qtr.	93.10	91.50	82.60	82.20	89.40	84.90	89.70

(a) For definitions, see section headed 'Definitions'.

(b) Includes the Australian Capital Territory.

(c) Includes the Northern Territory.

Surveys of Weekly Earnings and Hours

General

Sample surveys in respect of most employers in the private sector subject to pay-roll tax have been conducted by the Bureau as at the last pay period in October. The results of the surveys are based on returns from stratified random samples of private employers subject to pay-roll tax; for Australia as a whole, the 1969 survey was based on the returns of approximately 4,600 employers whose employees numbered 1,710,000 males and 761,000 females.

Definitions

Weekly Earnings: gross earnings before taxation and other deductions have been made; includes overtime earnings, ordinary time earnings, shift allowances, penalty rates, commission and similar payments; and that part of paid annual leave, paid sick leave, long service leave and paid holidays taken during the specified pay-period. It includes one week's proportion of payments made other than on a weekly basis, e.g. salary paid fortnightly or monthly. Retrospective payments are excluded.

Juniors: those under 21 years of age not paid adult rates (but 'adults' may include those under 21 years receiving adult rates).

Full-time Employees: employees who ordinarily work 30 hours or more a week and who received pay for the last pay-period in October.

Results of Surveys

The next table shows, for Tasmania: (i) average weekly earnings; (ii) average weekly hours paid for; and (iii) average hourly earnings.

Average Earnings and Hours, Private Employment (a): All Industry Groups (b)

Particulars	October (c)				
	1966	1967	1968	1969	1970
Average Weekly Earnings—	\$	\$	\$	\$	\$
Adult Males	60.10	62.20	65.50	69.60	74.90
Junior Males	27.80	30.90	32.40	34.50	37.90
Adult Females	33.70	35.70	37.90	40.00	43.60
Junior Females	22.00	23.80	24.50	26.60	28.70
Average Weekly Hours Paid for—	hrs	hrs	hrs	hrs	hrs
Adult Males	42.6	42.0	42.0	42.2	42.0
Junior Males	40.7	40.4	40.7	40.2	40.6
Adult Females	39.1	38.8	38.9	38.9	39.1
Junior Females	39.5	38.9	39.2	39.0	39.0
Average Hourly Earnings—	\$	\$	\$	\$	\$
Adult Males	1.41	1.48	1.56	1.65	1.78
Junior Males	0.68	0.77	0.80	0.86	0.93
Adult Females	0.86	0.92	0.97	1.03	1.12
Junior Females	0.56	0.61	0.62	0.68	0.74

(a) Private employees only. Excludes managerial, executive, professional and higher supervisory staff. Full-time employees only included.

(b) Excludes rural industry and private domestic services.

(c) Last pay period in October.

The following table analyses total earnings, for Tasmania, to show their overtime component in October 1969:

**Average Weekly Overtime and Ordinary Time Earnings (a), Private Employment (b)—
October 1970
(\$)**

Particulars	Average Weekly Overtime Earnings	Average Weekly Ordinary Time Earnings	Average Weekly Total Earnings
Adult Males—			
Manufacturing—			
Founding, Engineering, Vehicles, etc.	10.20	72.3	82.50
Other	7.40	62.60	70.00
Total	8.30	65.60	73.80
Non-Manufacturing	8.40	67.80	76.20
All Industry Groups ..	8.30	66.60	74.90
Junior Males, All Industry Groups ..	2.40	35.50	37.90
Females, All Industry Groups—			
Adult	1.40	42.20	43.60
Junior	0.60	28.10	28.70

(a) Averages for all employees represented in the survey.

(b) Private employees only. Excludes managerial, executive, professional and higher supervisory staff. Full-time employees only included.

Minimum Wage Rates, Selected Occupations, Hobart

The following table shows minimum wage rates for selected occupations as prescribed by Federal and State awards, agreements and various determinations (both registered and unregistered) operative at 31 December 1969 and 1970. Unless specified, rates shown in the following table are for a 40-hour week. Increases reflect various margin adjustments.

Selected Minimum Wage Rates, Adult Males and Females: Hobart

Industry and Occupation	31 December		
	1968	1969	1970
ADULT MALES			
Primary Production—			
Farming (General), General hand (a)	43.00	43.00	43.00
Grazing, Shearer (per 100 flock sheep) (b)	21.00	21.00	21.00
Mining and Quarrying—			
Coal Mining (c), Miner (machine)	59.10	59.10	59.10
Quarrying, Labourer	43.00	48.00	48.00
Engineering, Metals, Vehicles, etc—			
Engineering—Fitter or Turner	57.10	57.10	57.10
Toolmaker	62.20	62.20	62.20
Textiles, Clothing and Footwear—			
Clothing Trades (Readymade), Tailor	51.60	54.20	54.20
Footwear, Maker	43.40	47.40	47.40
Textiles—Knitting, Knitter	43.80	46.00	46.00
Woollen, Weaver	42.60	44.10	44.10

Selected Minimum Wage Rates, Adult Males and Females: Hobart—continued

(\$)

Industry and Occupation	31 December		
	1968	1969	1970
Food, Drink and Tobacco—			
Aerated Water and Cordials, General hand	43.40	43.40	43.40
Bacon Curing, Boner	58.90	58.90	58.90
Bread Baking, Doughmaker	59.80	66.00	66.00
Brewing, General hand	49.08	49.08	49.08
Butter, Cheese and Milk Processing, Butter maker ..	48.90	48.90	48.90
Confectionery, Confectioner (Group 1)	50.40	55.40	55.40
Jam, Fruit and Vegetable Preserving, General hand ..	43.00	46.80	46.80
Meat Industry—Labourer (beef, mutton)	48.10	48.10	48.10
Slaughterman (mutton)	61.20	67.80	67.80
Sawmilling, Furniture, etc.—			
Sawmilling and Timber yards—Machinist (A grade)	57.10	57.10	57.10
Sawyer (Circular) ..	47.00	47.00	47.00
Paper, Printing, etc.—			
Printing (General)—Bookbinder	57.10	57.10	57.10
Machine compositor ..	62.20	62.20	62.20
Printing (Newspapers)—Machine compositor (day work)	70.20	81.00	81.00
Machine compositor (night work) (d)	76.90	88.20	88.20
Other Manufacturing—			
Brickmaking, Drawer	44.85	48.15	48.15
Electricity Generation and Supply, Electrical fitter ..	62.00	62.00	62.00
Building and Construction—			
Building (e)—Bricklayer, roof tiler	69.00	76.44	76.44
Builder's labourer skilled	56.10	62.52	62.52
Builder's labourer unskilled	51.20	56.36	56.36
Carpenter	69.50	77.26	77.26
Electrician (installation)	60.60	66.10	66.10
Plasterer	69.00	76.44	76.44
Painter	68.90	76.32	76.32
Plumber	62.60	68.60	68.60
Railway Services—			
Traffic—Locomotive engine driver	67.10	68.75	68.75
Porter	r 43.90	45.45	45.45
Road and Air Transport—			
Road Transport, Motor truck driver (over 25 cwt to 3 ton)	49.90	56.15	56.15
Tramways and buses, Bus driver (one-man operator)	57.40	57.40	57.40
Shipping and Stevedoring—			
Shipping (cargo vessels), Able seaman (f) (g)	54.10	54.10	54.10
Stevedoring, Wharf labourer (per hour) (h)	1.73	1.80	1.80
Communication—			
Post Office, Postman	50.47	58.85	58.85
Wholesale and Retail Trade—			
Butchers, General butcher	57.10	57.10	57.10
Petrol Service Stations, Attendant	44.20	44.20	44.20
Retail Stores, Shop assistant (grocery)	44.90	44.90	44.90
Wool Stores, Wool classer	57.70	60.70	60.70
Public Administration, Community and Business Services—			
Hospitals, Orderly	43.70	49.15	49.15
Other Services—Graduate engineer	81.00	81.00	81.00
Graduate scientist	74.40	74.40	74.40
Amusement, Hotels, Personal Services, etc.—			
Hairdressing, Hairdresser (men's)	52.40	56.50	56.50
Hotels (i), Barman	44.90	44.90	44.90
Restaurants (i), Cook (one cook only employed) ..	46.20	46.20	46.20
Watchmen, Cleaners, etc., Office cleaner (day) ..	46.20	46.20	46.20

Selected Minimum Wage Rates, Adult Males and Females: Hobart—continued
(\$)

Industry and Occupation	31 December		
	1968	1969	1970
ADULT FEMALES			
Textiles, Clothing and Footwear—			
Dry Cleaning, Presser	48.80	48.80	48.80
Order Dressmaking, Machinist	36.40	38.20	38.20
Readymade Dressmaking, Table hand or Coat machinist	35.50	37.20	37.20
Textiles—Knitting, Machinist	32.50	34.30	34.30
Woollen, Weaver	32.80	34.70	34.70
Food, Drink and Tobacco—			
Confectionery, General hand	32.70	35.70	35.70
Jam, Fruit and Vegetable Preserving, General hand ..	31.80	35.00	35.00
Transport and Communication—			
Post Office, Telephonist (j)	38.23	44.28	44.28
Wholesale and Retail Trade—			
Retail Stores—Shop assistant (confectionery) ..	35.10	35.10	35.10
Shop assistant (drapery)	43.70	43.70	43.70
Public Administration and Community and Business Services—			
Commonwealth Public Service, Typist (k) ..	47.29	47.29	47.29
Hospital Nurses (qualified), first year	48.90	54.77	54.77
Amusements, Hotels, Personal Services, etc.—			
Cleaners, Office cleaner (day)	37.80	37.80	37.80
Hairdressing, Hairdresser	40.45	40.45	40.45
Hotels (i), Barmaid	44.90	44.90	44.90
Restaurants (i), Waitress	34.50	38.60	38.60
Theatres, Usher, ticket-taker, etc. (j)	35.80	40.00	40.00

(a) 44-hour week. (b) Rates shown are 'not found rates'. Shearers' hours of work are 40 per week. (c) In addition to the rate shown, an attendance allowance is payable for each full fortnightly pay period worked. (d) 38-hour week. (e) Rates shown are weekly equivalents of hourly rates. They include allowances for excess fares, travelling time, sick leave, statutory holidays, following the job, etc. (f) Includes an allowance valued at \$5.47 per week for keep and accommodation. (g) Rates shown are for 40 hours of work; seamen are required to work eight hours per day. (h) Rates shown are for casual wharf labourers on other than special cargo work. (i) Weekly cash payments where board and lodging are not provided. (j) 36-hour week. (k) 36½-hour week.

WAGE-FIXING AUTHORITIES

Tasmanian State Wages Boards

History

The evolution of the Tasmanian Wages Boards system is described in the 1968 *Year Book*. The following sections describe the present wages boards situation.

Constitution

A wages board is set up for the common trade, industry or profession of each employers' group (e.g. Building Trades, including employers of painters, glaziers, signwriters, etc.). On each board of which there are about 70, the employers and the employees have equal representation; one board (Electric Zinc) has eight representatives for each, while the smallest have only two representatives for each. The *Wages Boards Act 1920* was amended in 1961 to provide for a full-time government-appointed Chairman.

Members of Boards

Qualification for Board Membership: Following the 1970 amendments a person may be appointed to membership of a State wages board if: (i) he is an employer, manager or employee engaged in the particular trade; (ii) he has had twelve months' experience, gained within five years immediately preceding appointment, of managing a corporate body engaged in the industry and is authorised by the particular body to accept appointment; (iii) he is an officer of an association which includes members engaged in the relevant trade; and (iv) he is an officer of the Tasmanian Trades and Labour Council. The provisions of the 1970 amending Act: (i) permit an officer of an association connected with more than one trade to be appointed to a board; and (ii) recognise service in associations connected with the trade as experience in the trade. Not more than half of the employer or employee representatives on a board are to be specialists i.e. representatives from employers' associations or trade unions. (If the number of representatives is an odd number the next even number is used to determine the maximum number of specialists who may sit on the board.) The Crown, as an employer, is not represented on the wages boards. Any member who either: (i) ceases to be engaged in the trade covered by the wages board; or (ii) ceases to be an officer of an association connected with the trade and is not otherwise qualified for membership, is required to vacate his seat on the wages board.

Nomination and Appointment of Board Members: The 1970 amendments make provision for nomination of board members by: (i) employer and employee organisations; and (ii) individual employers and employees. Special provisions apply to officials of the Tasmanian Trades and Labour Council. If the number of nominees falls short of the positions to be filled, the Minister may select and appoint the necessary additional persons. When the number of nominees exceeds the number of vacant positions, the Minister selects the representatives from the nominees received. The Minister's decision is final. (Previous provisions for elections in the above two cases were repealed.)

Board Meetings and Proceedings

When a quorum is not present the Chairman is required to adjourn proceedings for half an hour and, if at the end of this interval a quorum is not present, the powers of the board can be exercised by a majority of the members (including the chairman) present.

Role of Chairman

The Chairman's chief power at meetings of boards derives from the fact that he has a casting vote; he wields no arbitral power but is enjoined, when there is equal division between the representative members to do all things ('... whether by adjourning ... by making suggestions, consulting with members ... or otherwise ...') needful to obtain agreement of the board, before deciding the matter at issue on his casting vote. From the meeting's recorded decisions, the Chairman drafts a statement of the amended wage-rates, allowances and conditions; this is known as a determination and upon gazettal becomes law.

The Chairman may also determine any matter placed before him by a majority of the board members. In such cases his determination is regarded as a decision of the board. Further powers were given to the Chairman under the Common Rule amendments contained in the 1970 Act.

Common Rule Determinations

Section eleven of the *Wages Boards Act* 1970 contains the following important amendment to the principal Act:

'25B—(1) On application being made to the Minister by—

- (a) an organisation of employers; or
- (b) the body known as the Tasmanian Trades and Labour Council,

for making of a determination under this section in relation to a matter referred to in the application, the Minister may refer the application to the Chairman for determination.'

The Chairman may only make common rule determinations in respect to the following matters: (i) basic wage; (ii) minimum wage; (iii) standard hours of work; (iv) paid leave of absence; and (v) a matter, determined in an award under a Commonwealth Act, which affects or relates to ten or more trades for which State wages boards have been appointed. Determinations under this provision apply to all boards affected by the particular matter.

Before making a 'common rule determination' the Chairman is required to: (i) confer with persons engaged in the relevant trades as he thinks necessary; and (ii) in his determination give due consideration to these persons' opinions.

When the '*common rule determination*' provisions are not or cannot be applied, the matter may be heard as a *test case*.

Test Cases

On occasion, issues are raised which do not fall within the scope of a common rule determination but which obviously have wide implications, e.g. general margins claims. The meeting of the particular wages board raising the issue may be adjourned and a wider conference convened at which all major employer and employee groups are represented. The question can then be argued as one affecting a number of boards, or often all boards, but the final outcome is a determination affecting the particular wages board which raised the issue. This determination then sets the pattern for the variation of determinations of other wages boards. An amendment of the Act in 1966 provides for the variation of a wages board determination by written application of all representative members, if the Chairman approves; this obviates the need for many formal meetings and also allows the outcome of test cases to be speedily adopted in the determinations of all boards.

Powers and Functions of the Boards

A board may determine any industrial matter in relation to the trade for which it has been appointed. Included in the matters which it may determine are: wages rates; hours of work; leave (other than long service leave); date from which any determination becomes effective; privileges, rights and duties of employers' and employees; the mode, terms and conditions of employment. The boards may not determine matters relating to: (i) opening and closing hours; (ii) bonus payments; (iii) superannuation schemes; and (iv) engagement, dismissal or reinstatement of any particular class of employees.

Wages boards determinations are now binding upon the Crown.

Industrial Disputes

Under the Act, the Minister may call a compulsory conference for the purpose of settling or preventing industrial disputes. Industrial disputes are defined in Section 16 of the 1970 Act as:

- '(a) a matter in respect of which a board is authorised by this Act to make a determination; or
- (b) the engagement, dismissal, or reinstatement of any particular employee or particular class of employees'.

Those summoned may include not only the direct participants, but also other persons connected in industrial matters which bear on the dispute or, even more broadly, any persons at all whose attendance may help a settlement.

By an amendment of the Act in 1960 the conference Chairman has the power to make a written order directing certain action to be taken if he considers it will prevent or settle the dispute; recipients of such orders are bound to comply, the penalty for ignoring an order being \$200.

The compulsory conference is presided over by a person directed by the Minister but, in practice, the Chairman of Wages Boards is generally given this conciliation role.

Tasmanian Public Service Tribunal

General

Under the *Public Service Tribunal Act* 1958 the Tasmanian Public Service Tribunal is vested with determining the salaries and specified conditions of service for employees of government and semi-government instrumentalities.

Employees under the Tribunal's jurisdiction include those in the public service, State Parliament, the teaching service, the police force, public hospitals, the school dental nursing service, mental health services, and in various statutory authorities and State instrumentalities.

The Tribunal is composed of a full-time chairman and deputy-chairman with eight part-time members, two of whom are Government nominees and the others elected representatives of the police force, teaching service and general service. For each hearing the Tribunal consists of the chairman or deputy-chairman, a Government nominee and an appropriate elected member (according to the group affected by the claim being heard).

Awards are current for a statutory period of three years and continue in force until revoked. However, claims to amend awards may be made at any time in the event of changed circumstances. Consent awards may be made at the discretion of the Tribunal.

In 1971 the Tribunal awarded a six per cent increase in total salaries based on a basic salary component of \$2,035 per annum for an adult male employee.

Industrial Disputes

Statistics of industrial disputes refer only to those involving a stoppage of work of ten man-days or more. The information is compiled from the following sources: (i) direct from employers and trade unions; (ii) reports from government departments and authorities; (iii) reports from State and Commonwealth industrial authorities; and (iv) information contained in trade journals, newspapers, etc. Particulars of some stoppages are estimated and the following statistics should be regarded as giving a broad measure only of industrial stoppages.

Industrial Disputes (a)

Year				Disputes	Workers Involved	Working Days Lost	Estimated Loss in Wages
				no.	'000	'000	\$'000
1963	..	..	..	11	5.0	2.9	26.8
1964	..	..	..	8	1.9	1.9	18.0
1965	..	..	..	17	5.1	3.9	41.4
1966	..	..	..	14	2.5	3.1	34.8
1967	..	..	..	29	6.2	7.3	82.3
1968	..	..	..	28	7.8	13.0	149.0
1969	..	..	..	44	8.7	9.9	115.3
1970	..	..	..	66	14.8	32.2	(b) 451.1

(a) Involving a stoppage of ten man-days or more.

(b) The estimated Tasmanian loss was 1.46 per cent of the Australian total in 1970.

The following table outlines the effect of industrial disputes on the labour force involved.

Industrial Disputes by Industry Groups

Period	Mining and Quarry- ing	Manufacturing						Building and Con- struc- tion
		Engi- neering, Metals, Vehicles	Textiles, Clothing, Foot- wear	Food, Drink, Tobacco	Paper, Print- ing	Other	Total	
NUMBER OF DISPUTES								
1967	1	3	..	..	..	4	7	14
1968	5	4	..	..	..	3	7	9
1969	7	2	..	2	1	4	9	13
1970	11	13	1	4	2	3	23	18
1970—								
March Qtr	..	5	1	1	..	..	7	3
June Qtr ..	4	1	..	1	1	..	3	4
Sept. Qtr	5	5	..	1	1	2	9	7
Dec. Qtr ..	2	2	..	1	..	1	4	4
WORKERS INVOLVED (DIRECTLY AND INDIRECTLY) ('000)								
1967	0.1	1.9	..	..	..	1.8	3.7	1.3
1968	1.0	1.5	..	..	..	2.3	3.8	1.3
1969	1.3	0.2	..	0.1	0.1	0.6	1.0	0.9
1970	3.5	1.5	..	1.2	0.5	1.6	4.9	2.8
1970—								
March Qtr	..	0.8	..	..	..	..	0.8	0.8
June Qtr ..	1.1	0.1	..	1.0	0.1	..	1.1	0.5
Sept. Qtr	1.3	0.5	..	0.1	0.4	1.6	2.6	1.2
Dec. Qtr ..	1.0	0.2	..	0.1	..	..	0.3	0.3
WORKING DAYS LOST ('000)								
1967	0.3	2.1	..	..	..	2.9	5.0	1.5
1968	4.2	2.1	..	..	..	3.0	5.2	1.7
1969	1.4	0.4	..	0.3	0.1	0.1	1.0	1.9
1970	11.2	2.1	..	0.3	0.2	3.0	5.6	9.0
1970—								
March Qtr	..	1.1	..	..	..	..	1.2	0.9
June Qtr ..	1.3	..	..	0.1	0.1	..	0.2	2.3
Sept. Qtr	4.3	0.4	..	0.1	0.1	2.9	3.5	4.4
Dec. Qtr ..	5.6	0.5	..	0.1	..	0.1	0.7	1.4
ESTIMATED LOSS IN WAGES (\$'000)								
1967	2.6	24.9	..	..	..	29.6	54.5	20.5
1968	61.3	22.7	..	..	..	24.9	47.5	19.6
1969	18.4	4.5	..	3.4	1.4	1.5	10.9	27.9
1970	194.8	25.4	0.3	3.3	1.8	40.0	70.8	116.5
1970—								
March Qtr	..	14.8	0.3	0.6	..	..	15.7	9.5
June Qtr ..	20.6	0.1	..	1.1	0.7	..	1.9	27.5
Sept. Qtr	61.5	5.1	..	0.9	1.1	38.8	45.9	55.6
Dec. Qtr ..	112.7	5.4	..	0.7	..	1.2	7.2	23.9

Industrial Disputes by Industry Groups—continued

Period	Railway Services	Road and Air Transport	Shipping	Stevedoring	Amusement, Hotels, Personal Service, etc.	Other Industries (a)	Total
NUMBER OF DISPUTES							
1967	1	2	..	1	2	1	29
1968	1	1	..	4	..	1	28
1969 .. .. .	..	4	3	5	2	1	44
1970 .. .. .	..	2	2	6	..	4	66
1970—							
March Qtr .. ..	..	..	..	1	..	1	12
June Qtr .. ..	..	1	1	5	..	2	20
Sept. Qtr .. ..	..	1	1	..	..	..	23
Dec. Qtr .. ..	..	..	..	..	..	1	11
WORKERS INVOLVED (DIRECTLY AND INDIRECTLY) ('000)							
1967	0.5	0.1	..	..	0.5	0.1	6.2
1968	0.5	..	..	0.8	..	0.4	7.8
1969 .. .. .	..	2.8	0.1	1.8	0.6	0.1	8.7
1970 .. .. .	..	0.7	..	2.3	..	0.6	14.8
1970—							
March Qtr .. ..	..	..	..	1.2	..	0.3	3.1
June Qtr .. ..	..	0.2	..	0.9	..	0.3	4.1
Sept. Qtr .. ..	..	0.6	..	0.2	..	..	5.8
Dec. Qtr .. ..	..	..	..	..	..	0.1	1.7
WORKING DAYS LOST ('000)							
1967	0.2	0.1	..	..	0.1	..	7.3
1968	0.4	..	..	0.6	..	1.0	13.0
1969 .. .. .	..	3.1	0.2	1.9	0.3	0.1	9.9
1970 .. .. .	..	3.1	..	2.7	..	0.6	32.2
1970—							
March Qtr .. ..	..	..	..	2.2	..	0.2	4.5
June Qtr .. ..	..	..	..	0.5	..	0.4	4.6
Sept. Qtr .. ..	..	3.0	..	0.1	..	..	15.4
Dec. Qtr .. ..	..	..	..	..	..	..	7.7
ESTIMATED LOSS IN WAGES (\$'000)							
1967	2.4	0.9	..	0.1	1.0	0.2	82.3
1968	4.7	0.2	..	6.3	..	9.5	149.0
1969 .. .. .	..	30.3	2.8	21.1	2.3	1.7	115.3
1970 .. .. .	..	31.2	0.5	30.7	..	6.5	451.1
1970—							
March Qtr .. ..	..	..	..	24.5	..	2.1	51.8
June Qtr .. ..	..	..	0.3	5.4	..	4.2	60.0
Sept. Qtr .. ..	..	31.2	0.2	0.8	..	..	195.3
Dec. Qtr .. ..	..	..	..	..	..	0.2	144.0

(a) Includes: Communications; finance and property; wholesale and retail trade; public authority (n.e.i.); and community and business services.

Chapter 14

FINANCE

PUBLIC FINANCE

Commonwealth and State

Change in Relationship

Before Tasmania became an original State of the Commonwealth, the responsibility for raising revenue and borrowing loan moneys rested with the Tasmanian Government. Due to developments since Federation, Tasmania in common with other Australian States, now has limited ability to raise the money required for revenue and capital purposes; the Commonwealth Government has become almost the exclusive channel for loan funds for State purposes, and supplements State revenue by massive grants from its own funds. The emergence of the Commonwealth as the dominating influence in the financial transactions of the State Governments can be traced to three events:

- (i) under the Constitution the States surrendered the right to levy customs and excise duties, which passed exclusively to the Commonwealth;
- (ii) under the *Financial Agreement Act 1927*, the Commonwealth became the borrowing agent for the States; and
- (iii) during World War II, under the Uniform Tax Scheme, the Commonwealth became the sole authority levying taxes upon the income of persons and companies, a war-time measure which has continued to this day.

The result of these changed relationships can be summarised as follows:
(i) the Commonwealth Government, as the channel for loan funds for State purposes, exercises a substantial degree of control over public investment;
(ii) to carry out functions for which their revenue is entirely inadequate, the States have become heavily dependent on the Commonwealth Government for general and specific grants. The Commonwealth Government is therefore placed in a position to exercise a substantial degree of control over the ordinary public expenditure of the States.

Principal Activities of the States

The Federal Constitution lists the matters over which the Commonwealth Parliament has power to legislate. Some of these powers are given exclusively to the Commonwealth (e.g. defence, customs and excise) but, in many matters, the Commonwealth and State Governments have concurrent powers, Commonwealth law prevailing where there is conflict. Matters other than those listed in the Constitution remain the concern of the States. Principal government activity at State level embraces education, health and welfare services, the development of internal resources, land settlement, soil conservation, maintenance of law and order and the provision of public utility services such as roads, electricity, public transport and water supply. Such activities are undertaken either by State Departments or by statutory and local

government bodies created under State legislation. The most obvious form of revenue for the discharge of these functions is State taxation but the Commonwealth exercises a practical monopoly over the more lucrative tax sources (e.g. customs and excise, income tax, sales tax, etc.). A responsibility therefore rests on the Commonwealth to supplement State revenues.

Summary of Commonwealth Payments

In the following sections, the main forms of Commonwealth assistance are described; the following table shows the total payments to Tasmania from the Commonwealth Consolidated Revenue Fund:

Commonwealth Consolidated Revenue Fund: Payments To or For Tasmania
(£'000)

Item	1967-68	1968-69	1969-70
Financial Assistance Grants	37,968	42,209	48,514
Special Grants (Section 96)	19,889	16,810	21,900
Financial Agreement Payments—			
Interest on State Debts	534	534	534
Sinking Fund on State Debts	1,398	1,485	1,598
Universities—Capital and Maintenance	1,827	2,217	2,261
Colleges of Advanced Education	190	291	1,074
Teachers' Colleges	360	960	250
Pre-School Teachers' Colleges .. .. .	..	100	120
School Libraries .. .. .	..	72	140
Technical Training	334	275	376
Science Laboratories (Schools)	420	409	256
Independent Schools .. .. .	..	..	286
Research Grants	158	194	182
Tuberculosis Hospitals—Capital and Maintenance	307	353	367
Blood Transfusion Services	13	25	21
Mental Health Institutions	358	399	108
Assistance for Deserted Wives .. .. .	..	67	77
Dwellings for Aged Pensioners .. .. .	..	..	100
Aboriginal Advancement .. .. .	..	25	39
Commonwealth Aid for Roads	8,000	8,500	9,100
Gordon River Road	200	..	..
Farming Extension Services	147	228	226
Softwood Forestry	520	488	400
Hydro-Electricity	5,300	3,200	9,700
Water Resources Investigation	20	74	68
Disposal of Ship's Garbage .. .. .	..	..	57
Natural Disaster Payments	7,650	1,195	73
Miscellaneous	14	13	13
Total (a)	85,607	80,124	97,840

(a) This total cannot be identified *as such* in State accounts since part is taken into Consolidated Revenue, part into Loan Fund, and the balance into Trust and Special Funds.

Financial Assistance Grants

The (Federal) *States Grants (Income Tax Reimbursement) Act* 1942 provided for grants to the States as compensation for vacating the field of income tax. Various formulae have been employed to calculate each State's grant the principles of the present system dating from 1959. These involved annually increasing the grant by taking account of three factors: (i) increased State population; (ii) increased average wages; and (iii) a constant 'betterment' multiplier. As from 1965-66, the betterment factor was fixed at 1.2 per cent.

The calculation of the Tasmanian grant for 1969-70 illustrates the application of the formula: (i) grant (1968-69) \$41,709,807; (ii) percentage increase in Tasmanian population in year 1969, 1.3263; (iii) percentage increase in wages per Australian employed (1969-70 over 1968-69) 8.3477095; betterment factor, 1.2 per cent.

$$\begin{aligned}\text{Calculated grant (1969-70)} &= \\ \$41,709,807 \times 1.013263 \times 1.083477095 \times 1.012 \\ &= \$46,340,489\end{aligned}$$

The Commonwealth then added a further \$2,173,944 to the calculated grant.

The following shows the amounts received as Financial Assistance Grants from 1952-53:

Financial Assistance Grants (a): Receipts by Tasmania
(**\$**)

Year	Amount	Year	Amount	Year	Amount
1952-53 ..	9,069,516	1958-59 ..	14,539,428	1964-65 ..	29,297,286
1953-54 ..	9,663,204	1959-60 ..	21,826,000	1965-66 ..	32,130,632
1954-55 ..	10,152,662	1960-61 ..	23,960,360	1966-67 (b) ..	34,772,852
1955-56 ..	10,704,450	1961-62 ..	25,671,238	1967-68 ..	37,968,098
1956-57 ..	12,048,712	1962-63 ..	26,616,104	1968-69 (c) ..	42,208,983
1957-58 ..	13,435,384	1963-64 ..	27,626,296	1969-70 (c) (d)	48,514,433

(a) Referred to as Tax Reimbursement Grants from 1942-43 to 1958-59. (Formula grants plus supplementary grants.)

(b) Includes \$210,335 special supplementary grant.

(c) Includes special financial assistance grants of: 1968-69, \$499,176; 1969-70, \$2,173,914.

(d) Of this amount \$48,504,173 was credited to the Consolidated Revenue Fund.

Future developments affecting Tasmania include: (i) \$10m will be transferred from the State's Special Grant and included as part of its 1970-71 Financial Assistance Grant for the purpose of calculating the formula grant for 1971-72; (ii) the Commonwealth will give Tasmania a special supplement of \$2.2m for 1970-71; and (iii) the betterment factor will be raised to 1.8 per cent for calculation of formula grants in 1971-72 and the following three years.

The introduction of the new financial assistance grant formula in 1959 had one notable effect—it allowed S.A. to cease being a claimant State for annual allocations of the Special Grant (*Section 96*) and resulted in the claimant States being reduced to two, Tasmania and W.A.. From 1 July 1968, W.A. ceased at its own request to be a claimant State. Following the 1970 Premiers' Conference, South Australia once again chose to become a claimant State. The operation of Special Grants and their allocation is discussed in the next section.

Special Grants (Section 96 of the Constitution)

Section 96 of the Constitution reads: 'During a period of ten years after the establishment of the Commonwealth and thereafter until the Parliament otherwise provides, the Parliament may grant financial assistance to any State on such terms and conditions as the Parliament thinks fit'.

The Commonwealth Grants Commission was established in 1933 and consists of three members on a part-time basis assisted by a full-time staff. In its third report (1936) it fixed upon the principle of financial need, which was expressed in the following terms: 'Special grants are justified when a State through financial stress from any cause is unable efficiently to discharge its functions as a member of the federation and should be determined by the amount of help found necessary to make it possible for that State by reasonable

effort to function at a standard not appreciably below that of other States'. In arriving at its recommendations, the Commission each year makes a detailed comparison of the budget results of the claimant States with those of the non-claimant States.

Prior to the passage of the (Federal) *States Grants Act* 1959, the claimant States had been Tasmania, W.A. and S.A. The new formula evolved under the *States Grants Act* 1959 had been devised partly in reaction to a claim by Victoria and Queensland to be also considered as claimant States; in effect, the new scale of increased grants under this legislation resulted in the number of claimant States falling to two, W.A. and Tasmania. The Grants Commission could then have used the accounts of the four non-claimant States to reach a basis for comparison; it finally decided to adopt a two-State standard, based on the budget of N.S.W. and Victoria. The withdrawal of W.A. as a claimant State from 1968-69 was followed by the Commission's announcement that it would consider using a five-State standard. However, on 6 July 1970 South Australia applied for a special grant for the year 1970-71. This application was accepted and the Grants Commission recommended that the State be paid an advance grant of \$5m. The Commission, in determining the special grants to be paid to Tasmania and South Australia for 1970-71, again used the two-State standard.

Since 1949-50, the Special Grant has been in two parts. One part is an advance to meet the estimated financial needs of the State during the current financial year and the other part is an adjustment (positive or negative), the magnitude of which depends on whether the advance made two years earlier proved greater or smaller than the amount of financial assistance deemed justified by the Grants Commission. The Special Grant for 1970-71 was \$12m subject to a positive adjustment of \$1,680,000 on 1968-69 accounts. (Following a request by the Tasmanian Government \$10m was transferred from the State's Special Grant to its Financial Assistance Grant.)

The positive adjustment applied in 1970-71 meant that the Grants Commission considered its 1968-69 advance grant too low in the light of its critical examination, not only of the 1968-69 accounts of Tasmania, but also those of the standard States (N.S.W. and Victoria). The accounting principles followed by the Grants Commission are necessarily complicated and can be examined in the Annual Reports of that authority. It is sufficient to say that the existence of the Special Grant has exercised considerable influence on the financial policy of successive Tasmanian Governments. Two principles employed by the Grants Commission will serve to illustrate the nature of this influence:

- (i) if State taxation in a claimant State is below average rates and average exemption scales in the standard States, an unfavourable adjustment will result; and
- (ii) if State social service expenditure in a claimant State is above comparable per-capita expenditure in the standard States (after allowing for certain difficulties encountered in the claimant State), an unfavourable adjustment will result.

Claimant States must endeavour to raise revenue from taxation at least at the rates and exemption scales adopted by the standard States and must not exceed the per capita expenditure of the standard States in certain fields. Departure from these standards can result in adverse Grant adjustments.

The following table shows Tasmanian Special Grant receipts:

Special Grant (Section 96): Receipts by Tasmania
(\$'000)

Year	Advance Grant	Adjustment Assessed (a)	Adjustment Applied (b)	Actual Receipt (c)
1960-61 ..	6,800	+ 282	+1,818	8,618
1961-62 ..	8,200	+ 556	+1,950	10,150
1962-63 ..	9,800	+ 982	+ 282	10,082
1963-64 ..	10,200	+1,332	+ 556	10,756
1964-65 ..	13,618	+1,166	+ 982	14,600
1965-66 ..	16,400	+ 889	+1,332	17,732
1966-67 ..	19,500	-1,190	+1,166	20,666
1967-68 ..	19,000	- 100	+ 889	19,889
1968-69 ..	18,000	+1,680	-1,190	16,810
1969-70 ..	22,000	..	- 100	21,900
1970-71 ..	(d) 12,000	..	+1,680	13,680

(a) Assessment is shown against the year for which accounts have been examined by the Grants Commission, although its effect does not become apparent until two years later.

(b) The two-year delay in application is due to the Grants Commission's obligation to analyse the accounts of claimant and non-claimant States before announcing the adjustments.

(c) Advance grant plus or minus the adjustment applied.

(d) In 1970-71, the Commonwealth agreed to transfer \$10m from the Special Grant to the Financial Assistance Grant; hence the apparent reduction.

The treatment of Special Grant adjustments in Tasmanian accounts is as follows:

- (i) if a favourable adjustment is made, an equal amount is paid into a suspense account (Accumulated Revenue Account) and the Consolidated Revenue Fund records only the advance grant; and
- (ii) if an unfavourable adjustment is made, an equal amount is transferred from the suspense account (Accumulated Revenue Account) to the Consolidated Revenue Fund. Thus the Consolidated Revenue Fund again shows as a receipt the amount of the advance grant and not, as might be expected, the advance grant *less* the unfavourable adjustment.

In effect, the State Treasury carries forward in the Accumulated Revenue Account unadjusted budget surpluses and deficits until the Grants Commission announces a favourable or unfavourable adjustment; action can then be taken to charge the net adjusted deficit against the Loan Fund.

Payments Under the Financial Agreement (1927)

Under the Financial Agreement which was entered into by the Commonwealth and the States in 1927, the Commonwealth contributes towards interest and sinking fund payments in respect of State debts existing at 30 June 1927, and towards sinking fund payments in respect of State debts incurred after that date for purposes other than the funding of revenue deficits.

The Commonwealth contribution towards payment of interest on the Tasmanian State debt is a constant annual sum of \$533,718 and will be continued until 1985.

The sinking fund contributions made by the Commonwealth under the Agreement in respect of State debts vary according to the date and nature of the borrowings. On State debts existing at 30 June 1927 the Commonwealth is making sinking fund contributions at the rate of 0.125 per cent a year until 1985 and in respect of cash loans raised for the States since that date, the Commonwealth makes sinking fund payments for 53 years at the annual

rate of 0.25 per cent. Each State is obliged to make sinking fund payments for corresponding periods at the rate of 0.25 per cent per annum regardless of the date on which the debt was incurred. The only exception is in relation to debt incurred for the purpose of funding revenue deficits. In these instances, the Commonwealth makes no sinking fund contributions and the States are obliged to make annual contributions to the sinking fund of not less than four per cent. However, in respect of Treasury Bills issued to cover State revenue deficits accruing between July 1927 and June 1935, special arrangements were made under which the Commonwealth contributes 0.25 per cent per annum on the amount outstanding until June 1983.

Recent Commonwealth sinking fund contributions in respect of the Tasmanian public debt are shown in the following table:

Commonwealth Contributions to State Sinking Fund
(£'000)

Year	Amount	Year	Amount
1961-62	896	1966-67	1,293
1962-63	972	1967-68	1,398
1963-64	1,062	1968-69	1,485
1964-65	1,129	1969-70	1,598
1965-66	1,212	1970-71	1,697

The acceptance of some Commonwealth liability for interest and sinking fund payments on State debts was only one part of a more extensive agreement setting up an Australian Loan Council and a National Debt Sinking Fund. The raising of loan money for the States under the Agreement is described later in this chapter.

New Assistance for Debt Charges

At the 1970 February Premiers' Conference, the Commonwealth announced that it was prepared to take over State debt totalling \$1,000m during the five-year period 1970-71 to 1974-75. However, this would have necessitated amendments to the *Financial Agreement Act* 1927 and caused considerable delay. The Commonwealth then proposed an alternative which involved grants to the States equal to interest on specific parcels of State debt. The distribution between the States will be in proportion to Commonwealth Securities on issue on behalf of each State at 30 June 1970. Tasmania's estimated receipts under this scheme are (in \$m): 1970-71, 0.8; 1971-72, 1.6; 1972-73, 2.4; 1973-74, 3.2; and 1974-75, 3.9. It is intended to amend the *Financial Agreement Act* 1927 by 30 June 1975 and formally transfer the \$1,000m of State debt to the Commonwealth.

Commonwealth Aid for Roads

The *Federal Main Roads Development Act* 1923 provided for annual Commonwealth contributions to the States, the basis of distribution being a formula weighted 40 per cent according to State area and 60 per cent according to State population. This basis was explicitly expressed in the *Federal Aid Roads Act* 1926 and continued to operate until 1959-60.

A new formula for distribution was embodied in the *Commonwealth Aid Roads Act* 1959 when the Commonwealth undertook to provide a total sum of \$500m over a five-year period. Of this amount, \$440m represented basic grants, and the remaining sum of up to \$60m was, subject to certain annual limits, payable to the States on the basis of \$1 for each \$1 allocated by the State Governments from their own resources for expenditure on roads over and above the amounts allocated by them for roads expenditure in 1958-59.

The amounts being made available by the Commonwealth were distributed between the States in each year in the proportion of *five per cent of the total* for Tasmania, and the balance shared between the other five States on the basis of one-third according to Census population, one-third according to area and one-third according to vehicles registered at 31 December preceding the year concerned. It will be observed that Tasmania, with less than one per cent of the area of the Commonwealth, was specifically exempted from the operation of the formula applied to the other States.

The *Commonwealth Aid Roads Act* 1964 contained provision for a second five-year plan but the total distribution over this period was raised to an amount of \$750m. A third five-year plan, based upon a distribution of \$1,252m is embodied in the *Commonwealth Aid Roads Act* 1969. Of this amount \$1,200m is divided between the States according to a new formula which includes characteristics of the old formula and a scheduling formula suggested in a Bureau of Roads Report. The remaining \$52m is distributed thus: W.A., \$40.8m; S.A. \$9m; and Tasmania, \$2.25m. Tasmania's total receipts under the new five-year plan will be \$56.25 m. The 1969 Act specifies that 50.06 per cent of the Commonwealth grant to a State is to be spent on urban roads; 15.56 per cent on main trunk roads; 32.88 per cent on other rural roads; and 1.5 per cent on planning and research. To qualify for a specified part of the total grant, each State, during the five-year period, is required to increase its expenditure on roads from its own resources above a base-year level at the same rate as the number of motor vehicles on register in the State increases.

The method of allocating road grants, outlined above, became operative from 1 July 1969.

Details of Tasmanian receipts of Commonwealth contributions in respect of road expenditure are shown in the following table:

Commonwealth Aid for Roads: Receipts by Tasmania
(\$'000)

Year	Amount	Year	Amount	Year	Amount
1952-53 ..	1,510	1958-59 ..	3,624	1964-65 ..	6,500
1953-54 ..	1,646	1959-60 ..	(a) 4,366	1965-66 ..	7,000
1954-55 ..	2,334	1960-61 ..	4,600	1966-67 ..	7,500
1955-56 ..	2,652	1961-62 ..	5,000	1967-68 ..	8,000
1956-57 ..	3,126	1962-63 ..	5,400	1968-69 ..	8,500
1957-58 ..	3,466	1963-64 ..	5,800	1969-70 ..	9,100

(a) Payment under the *Commonwealth Aid Roads Act* 1959 was \$4.2m and the balance represents a final adjustment of Commonwealth commitments under previous legislation.

State Revenue Raising Difficulties

Introduction: The financial relationships described in the opening section of this chapter have at times caused difficulties for individual States, especially when there has been an urgent need to increase revenue. In these circumstances, the complaint has been that the Commonwealth exercises a practical monopoly over the best 'growth' taxes and that, because of this, the States lack budget flexibility.

This section deals with: (i) a legal challenge to uniform income tax; (ii) the imposition and abandonment of States' receipts taxes; (iii) an attempt by a State to avoid paying Commonwealth pay-roll tax; and (iv) the transferring to the States from the Commonwealth of pay-roll tax. These four events may all be related to the general problem of Commonwealth—State financial relationships.

Uniform Income Taxation: In December 1955, the Victorian Government took out a writ in the High Court challenging the validity of the uniform income tax legislation, the Commonwealth having been the sole collector of income tax since World War II. In particular, Victoria disputed: (i) the power of the Commonwealth to make tax reimbursement grants conditional upon the States not levying income tax; and (ii) the Commonwealth's power to provide an absolute priority for payment of Commonwealth income tax over income taxes levied by the States. In November 1956, the New South Wales Government intervened to support Victoria's challenge.

However, the High Court in August 1957 ruled unanimously that the condition attaching to tax reimbursement grants (i.e. that a State should not levy income tax) was valid. This meant that any State wishing to levy income tax would be obliged to negotiate a special agreement with the Commonwealth; to tax incomes without such agreement would place the State's tax reimbursement grant in jeopardy. In 1964, the Victorian Premier proposed a *State* income tax which would be collected with existing Commonwealth machinery; the Commonwealth was not willing to provide these facilities and the proposal lapsed. To date, no special arrangement has been negotiated by any State.

Stamp Duty Legislation: From 1 February 1968, Victoria levied a stamp duty of one cent per \$10 on receipts (including wages and salaries in excess of \$20 per week). By 1969, some form of receipts tax was being levied by all States except Queensland although in Tasmania it was not applied to wages and salaries. In 1969, Hammersley Iron Pty Ltd challenged the validity of the West Australian receipts tax. The High Court, in its decision of 19 February 1970, ruled that the tax was a form of excise duty and therefore invalid. The Prime Minister then announced that the Commonwealth would collect the receipts tax on behalf of the States. A bill for this purpose was passed by the House of Representatives but defeated in the Senate.

On 8 October 1970, the Prime Minister announced that the Commonwealth would make special grants to compensate the States for the loss of revenue and legislation was introduced to validate the collection of the receipts tax for the period 17 November 1969 to 30 September 1970. The legislation was passed by the Senate on 20 November 1970.

Pay-roll Tax Challenge: In his 1970-71 Budget, the Victorian Premier and Treasurer, Sir Henry Bolte, did not make any appropriations for Commonwealth pay-roll tax. He then challenged the Commonwealth's power to levy pay-roll tax on State Governments. The full Commonwealth High Court handed down its decision on 14 May 1971 ruling that the Commonwealth was entitled to levy pay-roll tax on State Governments.

Growth Tax for the States: Increasing budgetary difficulties in recent years led to pressure from the State Premiers for access to a growth tax, preferably re-entry into the field of income taxation. The initial attempts involved the levy of a receipts duty tax (see earlier section '*Stamp Duty Legislation*'). At the June 1971 Premiers' Conference the Prime Minister refused to give the States access to the field of income taxation; however, he did offer to hand over pay-roll tax to the States. The proposal put forward was that the States would receive receipts from pay-roll tax but the amounts received would be deducted from the States' financial assistance grants. The Premiers unanimously rejected this proposal. After discussion the State Premiers agreed to accept pay-roll tax as a growth tax and deductions from financial assistance grants equivalent to pay-roll tax receipts subject to the following conditions:

- (i) The Commonwealth would give the States a non-recurring special financial assistance grant totalling \$40m during 1971-72; Tasmania's share is \$1.9m.
- (ii) An amount of \$22.7m would be added to the States' base financial assistance grant used to calculate financial assistance grants for the next four years (1971-72 to 1974-75 inclusive). As a result of this provision the States will receive an additional \$23m in the way of normal financial assistance grants during 1971-72; Tasmania's share is almost \$1m. Over the four-year period (1971-72 to 1974-75) the addition of \$22.7m to the base financial assistance grant will yield the States approximately \$100m.
- (iii) The Commonwealth agreed to bear the full cost resulting from the exemption from pay-roll tax of certain areas of local government.

The State Premiers decided to raise the pay-roll tax rate from $2\frac{1}{2}$ per cent to $3\frac{1}{2}$ per cent. The total expected receipts which will accrue to the States from pay-roll tax during 1971-72 are \$290m.

Loan Council (Financial Agreement)

The original Financial Agreement was made on 12 December 1927, but Tasmania did not become a party to it until 1 July 1928. The basic intention of the agreement was a co-ordinated approach to the loan market, the establishment of sound sinking fund arrangements and the sharing of State debt charges by the Commonwealth. The main provisions are summarised as follows:

- (1) The Commonwealth assumed certain liabilities in respect of State debts (see previous section on interest and sinking fund payments made by the Commonwealth in respect of Tasmanian State Debt—'Payments under the Financial Agreement').
- (2) The Australian Loan Council was set up to co-ordinate the public borrowings of the Commonwealth and the States. It consists of the Prime Minister (or his nominee) as Chairman, and the State Premiers (or their nominees). Each financial year the Commonwealth and the States submit programmes to the Loan Council setting out the amounts they desire to raise by loan during the next year. Revenue deficits to be funded are included in the borrowing programmes but borrowing by the Commonwealth for defence purposes is excluded from the terms of the agreement.

If the Loan Council decides that the total amount of the loan programmes for the year cannot be borrowed at reasonable rates and conditions, it then decides the amount which shall be borrowed and may, by unanimous decision, allocate that amount between the Commonwealth and the States. In default of a unanimous decision, the Commonwealth is entitled to one-fifth of the total amount to be borrowed and each State to a proportion of the remainder equal to the ratio of its net loan expenditure in the preceding five years to the net loan expenditure of all States during the same period.

Subject to the decisions of the Loan Council, the Commonwealth arranges all borrowings, including those for conversions, renewals and redemptions. However, the Commonwealth or a State may borrow for 'temporary purposes' by way of overdraft or fixed deposit, subject to limits fixed by the Loan Council. In addition, the Commonwealth may borrow within the Common-

wealth, or a State within its own territory, from authorities, bodies, institutions, or from the public by counter sales of securities, subject to Loan Council approval. Commonwealth securities are issued for money borrowed in this way and amounts so borrowed are treated as part of the borrowing programme for the year.

- (3) The Agreement involved setting up a National Debt Commission to administer one consolidated sinking fund in respect of the debt of the Commonwealth and the States. Sinking fund moneys are used to redeem unconverted securities at maturity and to re-purchase securities on the stock market.
- (4) It was realised at the inception of the Loan Council that, in the interests of co-ordinated borrowing, the Council should be advised of borrowings of large amounts by semi-government authorities (such loan raisings do not form part of State or Commonwealth debt and therefore are not within the scope of the original agreement). A set of rules evolved in 1936 is regarded as the 'Gentlemen's Agreement' and makes provision for the submission to the Council of annual loan programmes in respect of semi-government authorities (in conjunction with the loan programmes of the governments concerned) and for the fixing of the terms of individual semi-government loans coming within the scope of the annual programme. (For 1970-71, borrowings approved by the Loan Council for Tasmanian semi-government and local government authorities amounted to \$14,440,000.)

It should be emphasised that the Australian Loan Council does not itself raise money for Tasmanian semi-government and local government authorities; its concern is to assess the total impact of government borrowing for the year and then to fix ceilings for semi-government and local government authorities in the interests of a co-ordinated programme.

Money made available from the Commonwealth Loan Fund to the State of Tasmania is recorded in two State funds, namely:

- (i) the Loan Fund, to which are paid the receipts of new cash borrowings but not allocations under the Commonwealth and State Housing Agreement; and
- (ii) the Trust and Special Funds, to which are paid the allocations for housing made under the Agreement.

The following table shows Loan Council borrowing programmes undertaken on behalf of the State of Tasmania:

Tasmania: New Cash Borrowings Authorised by Australian Loans Council (a)
((\$'000))

Year	Amount	Year	Amount	Year	Amount
1953-54 ..	28,900	1959-60 ..	27,080	1965-66 ..	34,834
1954-55 ..	25,920	1960-61 ..	28,388	1966-67 ..	37,580
1955-56 ..	26,800	1961-62 ..	28,996	1967-68 ..	40,610
1956-57 ..	22,800	1962-63 ..	30,708	1968-69 ..	42,120
1957-58 ..	24,200	1963-64 ..	32,020	1969-70 ..	45,370
1958-59 ..	25,180	1964-65 ..	34,136	1970-71 ..	34,570

(a) For State works programmes; amounts credited to State Loan Fund.

The previous table excludes allocations under the Commonwealth and State Housing Agreements, which are also part of the Loan Council's programme. The following table shows allocations to Tasmania for housing purposes:

Tasmania: Allocations Under Commonwealth and State Housing Agreements (a)
(*\$'000*)

Year	Amount	Year	Amount	Year	Amount
1956-57 ..	4,000	1961-62 ..	5,856	1966-67 ..	7,500
1957-58 ..	4,000	1962-63 ..	5,200	1967-68 ..	6,700
1958-59 ..	4,400	1963-64 ..	6,000	1968-69 ..	7,500
1959-60 ..	3,900	1964-65 ..	6,400	1969-70 ..	7,600
1960-61 ..	4,000	1965-66 ..	7,448	1970-71 ..	8,750

(a) For housing; credited to State Trust Funds.

Grants For Capital Purposes

To assist the States in meeting their capital works programmes during the period 1970-71 to 1974-75 the Commonwealth will make available grants for the provision of non-productive capital works. In 1970-71 the total amount of the grant was \$200m, the States' total approved works and housing programmes amounting to \$823m. The grant will increase in the next four years in proportion to growth of the States' approved capital works programmes. In effect the Commonwealth will meet 24.3 per cent of the total State works programme during the five-year period.

Distribution of the grants is determined by agreement between the States or decided by the Commonwealth if the States are unable to reach agreement. Tasmania's share of the 1970-71 grant was \$13.98m which was credited to the State Loan Fund.

The provision of these grants reduces the amount which the State needs to borrow in order to carry out its capital works programme. The result of this decrease in the amount borrowed means that the burden of debt charges (interest payments and sinking fund contributions) on the Consolidated Revenue fund is reduced.

During 1970-71, the State Government expects to receive \$14.66m in interest-free grants for capital works. This compares with an estimated \$37.44m borrowed for capital works on behalf of Tasmania.

Tasmanian Public Account

The State Public Account includes the Consolidated Revenue Fund, the Trust and Special Funds, and the Loan Fund. Ordinary revenues from taxation and other sources are paid into the Consolidated Revenue Fund from which the main expenditures are for public debt charges, education, development of State resources, health and hospitals, general administration, subsidies to State business undertakings, law and order, and certain welfare activities. The Trust and Special Funds cover special transactions outside the ordinary operations of departmental expenditure, such as funds from the Commonwealth for specific purposes and moneys held for expenditure by the State at some future time. The Loan Fund receives its funds from public borrowings and the main expenditure is on State public works and on advances to State business undertakings.

A summary of transactions on the Tasmanian Public Account for a three-year period is given in the following table:

Public Account: Summary of Transactions
(\$'000)

Particulars	1967-68	1968-69	1969-70
Cash and Investments at Beginning of Year	8,848	5,947	5,261
Receipts—			
Consolidated Revenue Fund	100,563	107,846	123,819
Special Grant Adjustment	889	—1,190	— 100
Borrowings for New Capital Purposes	40,651	42,141	45,370
Other Payments to Loan Fund	3,925	4,294	4,342
Net Increase, Trust and Special Funds	—1,613	367	1,597
Total	144,415	153,457	175,027
Expenditure—			
Consolidated Revenue Fund	102,413	111,540	121,004
Loan Fund, Public Works and Purposes	44,861	42,582	49,312
Discount	41	21	..
Total	147,315	154,143	170,316
Cash and Investments at End of Year	5,947	5,261	9,972

The State Public Account is a complete record of the Government's operation of three specific funds, i.e. Consolidated Revenue, the Trust and Special Funds, and the Loan Fund. It is by no means a complete record of government activity, since statutory authorities and semi-government authorities such as the Hydro-Electric Commission, Transport Commission and Agricultural Bank carry on financial operations which are not recorded in the State Public Account. In a later section of this chapter, there appears the heading 'Exclusions from Consolidated Revenue' and this lists the relationship between the finances of the principal authorities and the Consolidated Revenue Fund; the general principle is that the gross receipts and gross expenditure of the authorities are excluded from the Consolidated Revenue Fund.

In the following table are shown the balances credited to each fund constituting the Public Account and the form in which the balances are held:

Public Account: Summary of Balances
(\$'000)

As at 30 June	Balance				Location			
	Accumulated Revenue Account	Loan Fund	Trust and Special Funds	Total	Cash in Treasury or Bank	Advanced to Departments	Govt and Other Securities (a)	Total
1966	— 3,493	1,755	4,228	2,490	1,213	738	538	2,490
1967	— 2,593	2,743	8,698	8,848	6,413	750	1,684	8,848
1968	— 2,423	1,285	7,085	5,947	4,602	763	582	5,947
1969	— 5,545	3,354	7,452	5,261	3,831	768	662	5,261
1970	— 2,830	3,754	9,048	9,972	3,257	773	5,942	9,972

(a) Includes fixed deposits.

In the previous table, the 'Accumulated Revenue Account' is a suspense account recording accumulated surpluses and deficits in the Consolidated Revenue Fund and also the funding of deficits. Details of the account are as follows:

Accumulated Revenue Account: Summary of Transactions
(\$'000)

Year	Opening Balance	Transactions			Closing Balance
		Budget Result, Consolidated Revenue	Special Grant Adjustment (a)	Deficits Charged to Loan Fund	
1966-67	-3,493	- 572	+1,166	+ 306	-2,593
1967-68	-2,593	-1,851	+ 889	+1,132	-2,423
1968-69	-2,423	-3,695	-1,190	+1,762	-5,545
1969-70	-5,545	+2,815	- 100	..	-2,830

(a) It is Tasmanian Treasury practice to record Special Grant adjustments in the Accumulated Revenue Account and to include, in published Consolidated Revenue receipts, only the advance grant.

In the following section dealing with Consolidated Revenue, Treasury practice has been followed in eliminating Special Grant adjustments from Consolidated Revenue total receipts.

Consolidated Revenue Fund

General

The financial transactions of the State of Tasmania are recorded under:

(a) Consolidated Revenue; (b) Trust Funds; and (c) Loan Fund.

Payments from Consolidated Revenue are made only on the basis of authority found in: (i) the annual Appropriation Act of the Parliament; (ii) Acts of the Parliament made in previous years and under which certain annual payments are classified as 'reserved by law'; and (iii) the *Public Account Act* 1957 (as amended in 1962) and the *Audit Act* 1918.

The third category of authority listed above is designed to give the Treasurer and the Government some flexibility in public expenditure since the Appropriation Act cannot be expected to anticipate, to the nearest dollar, the expenses that are likely to be incurred for each and every item. The relevant sections of the amended *Public Account Act* are 5A and 5B which provide that, in relation to Consolidated Revenue, the Treasurer may authorise transfers between votes within certain subdivisions of the appropriation and, on the authority of the Governor, supplement certain appropriations and provide funds to meet expenditure for which no other provision exists. Transfers, as described under 5A, are a matter for the Treasurer but additional expenditure, as described under 5B, needs ratification by Parliament before the close of the following financial year. Regulations 20 and 21 of the second schedule of the *Audit Act* provide for expenditure by the Treasurer to meet emergencies for which no vote exists; the Governor must first authorise such expenditure and the Auditor-General investigate the circumstances before payment can be made.

Exclusions from Consolidated Revenue

It should be observed that the Consolidated Revenue Fund does not include the complete revenue and expenditure in respect of all activities undertaken or authorised by the State Government: (i) some moneys are paid into State Trust Funds and some payments are made from such funds, e.g. the Commonwealth Aid Roads Grant is paid into the State Highway Trust Fund; (ii) the gross receipts and payments of a number of State business undertakings and State authorities are excluded from the Consolidated Revenue Fund, their relation to the fund being as follows:

- (a) In Tasmania, the railways (in common with Government shipping services) are administered by the Transport Commission and, since 1939-40, only the *net* losses of this authority have been met from the Consolidated Revenue Fund to which is credited the Commission's annual payment of debt charges (interest and sinking fund contributions) on advances made by the Government.
- (b) Omnibus services in Hobart, Launceston and Burnie are operated by the Metropolitan Transport Trust. The *net* annual loss of the authority is a charge against Consolidated Revenue which is credited with annual payment of debt charges made by the Trust on Government advances.
- (c) The gross receipts and expenditure of the Hydro-Electric Commission are excluded from the Consolidated Revenue Fund which is credited with annual payment of debt charges by the Commission. Net profit or loss on the Commission's activities is carried forward in the authority's own suspense account *and has no effect on Consolidated Revenue*.
- (d) Also excluded from the Consolidated Revenue Fund are the gross receipts and payments of: regional water supplies, Government Printing Office, Government Insurance Office, Public Trustee, State housing authorities, Closer Settlement, Rural Credits and other activities of the Agricultural Bank, etc. In accordance with various Acts, it is usual for the net profits or losses of the previous year to be paid to or from the Consolidated Revenue Fund for the current year. Debt charges on government money loaned to the authorities are paid to Consolidated Revenue.

Consolidated Revenue Fund, Summary

The following table shows the Consolidated Revenue and Expenditure of Tasmania, the surplus or deficit, and the aggregate deficit at the end of each year. It also calls attention to the Special Grant adjustments and shows how these Commonwealth payments modify the original budget result.

Consolidated Revenue Fund: Surpluses and Deficits
(\$'000)

Year	Revenue			Expenditure	Budget Result		Aggregate Net Deficit at End of Year
	Before Adjustment	Special Grant Adjustment	After Adjustment		Before Adjustment	After Adjustment	
1959-60	48,592	+1,950	50,542	50,656	-2,064	- 114	11,220
1960-61	53,772	+ 282	54,054	54,166	- 394	- 112	11,332
1961-62	60,636	+ 556	61,192	61,352	- 716	- 160	11,492
1962-63	63,036	+ 982	64,018	64,020	- 983	- 1	11,493
1963-64	67,836	+1,332	69,167	69,020	-1,185	+ 147	11,346
1964-65	74,846	+1,166	76,012	76,465	-1,618	- 452	11,799
1965-66	83,564	+ 889	84,453	85,585	-2,021	-1,132	12,931
1966-67	92,676	-1,190	91,486	93,248	- 572	-1,762	14,693
1967-68	100,563	- 100	100,463	102,413	-1,851	-1,951	16,644
1968-69	107,846	(a)	(a)	111,540	-3,695	(a)	(a)20,339
1969-70	123,819	(b)	(b)	121,004	+2,815	(b)	(b)17,524

(a) Positive adjustment of \$1,680,000 will be applied in 1970-71.

(b) Adjustment not yet determined but will be taken into account in 1971-72.

Deficit Funding

In the previous table, the original budget result is treated as provisional because the Grants Commission's adjustment is used to amend the original surplus or deficit and also the aggregate deficit. The Tasmanian Government refrains from immediately charging revenue deficits against the Loan Fund since the precise amount of the final deficit is not known until the Commission's adjustment is taken into account two years later. While the aggregate of all deficits at 30 June 1970 was \$17,524,000, the sum of \$14,693,000 has been charged against the loan fund as 'revenue deficits funded': thus the *unfunded* aggregate deficit is only \$2,830,000 carried as a *negative* balance in the accumulated revenue account.

Consolidated Revenue Fund—Receipts

The principal sources of revenue in this fund, in order of importance, are the grants and other financial assistance received from the Commonwealth Government, debt charges received from semi-government authorities in respect of State advances and State taxation.

The following table shows Tasmanian Consolidated Revenue receipts for a three-year period:

Consolidated Revenue Fund: Receipts
(**\$'000**)

Item	1967-68	1968-69	1969-70
Commonwealth Grants—			
Financial Agreement	534	534	534
Financial Assistance	37,968	42,209	48,504
Special	19,889	16,810	21,900
Total	58,391	59,553	70,938
Debt Charge Recoveries (a)—			
Interest	16,835	18,177	19,732
Sinking Fund	2,130	2,287	2,476
Total	18,965	20,464	22,208
State Taxation (b)	r 16,189	r 17,951	20,181
Lands and Forests—			
Forestry	1,603	1,598	1,653
Other Rents, Sales, etc.	369	332	339
Total	1,972	1,930	1,992
Semi-Government Authorities	368	331	310
Departmental Revenue, Fees, Rents, etc. ..	r 4,266	r 4,927	6,510
Victorian Lotteries Agreement	138	142	116
Commonwealth National Welfare Fund	r 1,162	r 1,358	1,463
Total Actual Receipts	101,452	106,656	123,719
Transfer, Accumulated Revenue Account (c) ..	— 889	+ 1,190	+ 100
Grand Total	100,563	107,846	123,819

(a) Mainly on advances made to semi-government bodies.

(b) See later section, 'State Taxation'.

(c) Special Grant adjustments.

The relative importance of the various components of the Consolidated Revenue Fund can be assessed by expressing them on a per capita basis using the State mean population for the relevant financial year.

Consolidated Revenue Fund: Receipts Per Head of Population
(£)

Item	1967-68	1968-69	1969-70
Commonwealth Grants	153.9	154.4	181.6
Debt Charge Recoveries	50.0	53.1	56.8
State Taxation	r 42.7	r 46.5	51.6
Lands and Forests	5.2	5.0	5.1
Semi-Government Authorities	1.0	0.9	0.8
Departmental Revenue, Fees, Rents, etc.	r 11.2	r 12.8	16.7
Victorian Lotteries Agreement	0.4	0.4	0.3
Commonwealth National Welfare Fund	3.1	3.5	3.7
Transfer, Accumulated Revenue Account	-2.3	+3.1	+0.3
Total	265.1	279.6	316.8

Debt Charge Recoveries

After Commonwealth Grants, debt charge recoveries is the next important item in Consolidated Revenue. The following table shows details of the payments of interest and sinking fund made by various authorities on advances which have been made to them by the State Government; since the advances have been made primarily from State loan borrowings, the Government has accepted an annual liability for debt charges (in respect of these authorities) approximately equal to the recoveries shown.

Debt Charge Recoveries: Consolidated Revenue Fund
(£'000)

Source of Recovery	Interest			Sinking Fund Contributions		
	1967-68	1968-69	1969-70	1967-68	1968-69	1969-70
Transport Commission	1,050	1,085	1,100	159	162	169
Metropolitan Transport Trust	132	132	133	19	19	20
Hydro-Electric Commission	12,562	13,649	14,868	1,688	1,817	1,984
Regional Water Supplies	821	913	944	102	118	128
Government Printing Office	22	22	21	3	3	3
King Island Abattoirs	17	r 17	18	3	3	3
Tasmanian Grain Elevators	43	43	41	9	9	9
Aluminium Industry Agreement	131	131	178	..	..	..
Closer Settlement	64	73	79	..	..	..
Returned Soldiers Settlement	19	18	18	..	..	..
Homes Act Advances	53	48	51	..	..	..
Homes Construction (Housing Department)	820	798	791	144	153	157
State Advances, Primary Producers	192	206	218	..	..	..
Loans to Local Bodies	61	63	61	..	..	..
Tourist Accommodation Loans	83	80	86	..	..	..
Loans to Industry	198	256	412	..	..	..
Iron Ore (Savage River) Agreement Act	170	228	222	..	..	..
Forestry Department	286	314	350	..	..	..
Flood Relief Act	8	9	8	..	..	..
Other	103	92	135	2	2	2
Total	16,835	18,177	19,732	2,130	2,287	2,476

State Taxation

In Tasmania the chief State taxes, in order of importance, are Motor Tax; Stamp Duties (on cheques, legal documents, etc.); Probate and Succession Duties; and Land Tax. Pay-roll tax which was first handed over to the State by the Commonwealth for the 1971-72 financial year will, no doubt, be a major source of taxation.

Not all State taxation is paid into the Consolidated Revenue Fund, as shown in the following table:

State Taxation Collections Paid to Special Funds
(*\$'000*)

Particulars	1967-68	1968-69	1969-70
Motor Taxation—			
Retained by Transport Commission	<i>r</i> 79	<i>r</i> 77	80
Racing Taxation—			
Paid to Racing Clubs and Racing Commission	513	487	525
Insurance Companies—			
Contributions to Fire Authorities	364	661	666
Total	<i>r</i> 956	<i>r</i> 1,225	1,271

In the next table, the figures shown for total taxes paid to Consolidated Revenue do not agree with those published by the State Treasurer. Excluded are amounts received from the Victorian Government under the Victorian Lotteries Agreement while 'Motor Taxes' include amounts not treated as taxes by the State Treasurer. The following table gives a summary, for a three-year period, of State taxation taken into the Consolidated Revenue Fund:

State Taxation Collections Paid into Consolidated Revenue
(*\$'000*)

Tax or Licence	1967-68	1968-69	1969-70
Probate and Succession Duties	2,525	3,029	3,263
Stamp Duties (a)	3,675	4,197	5,411
Land Tax	2,271	2,352	2,633
Liquor Tax and Licences	950	1,072	1,135
Racing Taxes	807	826	883
Motor Taxes (b)	<i>r</i> 5,855	<i>r</i> 6,368	6,718
Entertainment Tax	72	73	89
Other Licences	35	35	48
Total (c)	<i>r</i> 16,189	<i>r</i> 17,951	20,181

(a) Excludes: (i) stamp duties on bookmakers' tickets (included in 'Racing Taxes'); (ii) stamp duty on third party insurance (included in 'Motor Taxes'); and (iii) stamp duty on motor vehicle registration (included in 'Motor Taxes').

(b) See following section 'Motor Taxes'.

(c) Excluded are the following amounts received from the Victorian Government under the Victorian Lotteries Agreement: 1967-68, \$138,372; 1968-69, \$141,624; 1969-70, \$116,196.

Motor Taxes: In the preceding table motor taxes are shown as \$6,718,000. The next table shows how this figure can be reconciled with motor tax figures published by the State Treasurer:

Motor Taxes (a) Paid to Consolidated Revenue Fund, 1969-70
(\$'000)

Item	Amount
Motor Taxes	6,718
Less Stamp Duty on—Vehicle Registration (b)	363
Third Party Insurance (b)	294
Traffic Fees Paid to—Police Department (c)	462
Consolidated Revenue Fund (c)	770
	1,889
'Motor Tax' as published by State Treasurer	4,827

(a) See preceding table 'State Taxation Collections Paid into Consolidated Revenue Fund'.

(b) Treated as 'stamp duty tax' items by the State Treasurer.

(c) Includes motor vehicle registration fees, drivers' licences, charges for number plates, transfer of ownership fees and learners' permits.

The following summarises total taxation collected by the State:

Total State Taxation Collections (a)
(\$'000)

Particulars	1967-68 <i>r</i>	1968-69 <i>r</i>	1969-70
Paid into—Consolidated Revenue	16,189	17,951	20,181
Special Funds	956	1,225	1,271
Total	17,145	19,176	21,452

(a) Taxation is described more fully in a subsequent section, 'Taxation in Tasmania'.

Consolidated Revenue Fund—Expenditure

In the following table, a summary is given of the principal items of Consolidated Revenue Fund expenditure classified according to function:

Consolidated Revenue Fund: Expenditure by Function (a)
(\$'000)

Classification by Function	1967-68	1968-69	1969-70
Law, Order and Public Safety—			
Administration of Justice	1,087	1,158	1,338
Police	3,618	3,775	4,156
Prisons	792	824	866
Custody and Care of Delinquent Children	179	187	199
Fire Brigades	257	451	466
Other	25	30	58
Total	5,959	6,426	7,083
Education—			
Teacher Training	1,614	1,800	2,099
Primary (b)	7,414	8,143	9,275
Secondary	7,274	8,809	9,922
Tertiary—			
Technical	1,013	1,129	1,215
University	1,637	1,788	2,037
Advanced	400	583	716
Other (incl. Administration of Education Dept)	<i>r</i> 3,788	<i>r</i> 3,121	3,553
Total	<i>r</i> 23,142	<i>r</i> 25,373	28,818

Consolidated Revenue Fund: Expenditure by Function (a)—continued
 (\$'000)

Classification by Function	1967-68	1968-69	1969-70
Public Health—			
Mental Hospitals	2,321	2,198	2,185
T.B. Sanatoria	325	211	218
Other Hospitals (excl. Repatriation)	6,305	7,745	9,190
Maternal and Infant Health Centres	249	270	300
School Children (incl. Free Milk)	619	657	684
Other	1,638	1,735	1,914
Total	11,456	12,817	14,491
Welfare—			
Child Welfare (incl. Administration)	336	393	538
Relief of Destitute, Aged and Incapacitated	1,868	2,026	2,116
Other (incl. Disaster Relief)	220	266	256
Total	2,424	2,685	2,909
Development and Conservation of National Resources and Assistance to Industries—			
Agricultural, Pastoral and Dairying	r 2,875	r 3,132	3,333
Forestry	1,557	1,603	1,598
Mines and Minerals	611	648	673
Water Supplies	700	850	896
Fisheries and Game	r 153	r 144	291
Secondary Industries	178	161	193
Land Administration—			
Soldier Settlement	2,310	2,313	2,310
Other	629	628	687
Other	831	881	988
Total	r 9,845	r 10,361	10,970
Transport and Communication—			
Railways	2,271	2,352	1,185
Bus Services	875	1,030	1,011
Roads and Bridges	4,484	4,670	4,877
Other	1,265	1,617	500
Total	8,895	9,669	7,574
Legislature—			
Governor's Establishment	126	124	146
Parliament (incl. Committees)	735	783	822
Other	112	181	86
Total	973	1,088	1,055
General Administration Services n.e.i.—			
Public Service Administration	291	341	392
Public Works Administration	2,599	2,839	3,219
Other	3,073	3,273	3,768
Total	5,962	6,452	7,379
Regulation of Trade and Industry and Industrial Safety	410	461	484
Housing	224	254	297
Insurance (c)	41	55	69
Cultural and Recreational—			
Public Libraries, Museums and Art Galleries	742	798	860
Other (incl. Parks, Gardens, Reserves, Sports Grounds)	339	332	386
Total	1,081	1,131	1,246

Consolidated Revenue Fund: Expenditure by Function (a)—continued
(\$'000)

Classification by Function	1967-68	1968-69	1969-70
Services n.e.i.	168	167	243
Debt Services n.e.i. (State)—			
Interest and Exchange	26,097	r 28,146	31,556
Sinking Fund and Redemption	4,163	r 4,524	4,862
Loan Management	323	253	236
Total	30,583	32,923	36,653
Superannuation n.e.i.	1,138	1,324	1,414
All Other	112	356	318
Total Expenditure	102,413	111,540	121,004

(a) Based on Commonwealth code developed for analysis of government sector accounts.

(b) Includes special schools for handicapped children.

(c) Police Department motor vehicle comprehensive insurance.

Public Debt Charges

This is the largest item of expenditure but a high proportion is recovered from semi-government authorities. Interest and sinking fund contributions differ from those shown in the previous table: in the table below, interest on repurchased securities is included in Sinking Fund (but in the previous table included under Interest and Exchange).

Public Debt Charges: Net Burden on Consolidated Revenue
(\$'000)

Particulars	Interest			Sinking Fund Contribution		
	1967-68	1968-69	1969-70	1967-68	1968-69	1969-70
Public Debt Charges—						
Expenditure, Consol-						
dated Revenue	(a)26,408	(a)28,383	(a)31,771	(b) 4,175	(b)r4,538	(b) 4,881
Recovered from Semi-						
Government Bodies,						
etc.	16,835	18,177	19,732	2,130	2,287	2,476
Net Burden on Consolidated						
Revenue (c)	9,573	10,206	12,040	2,045	r2,252	2,405

(a) Includes loan management charges.

(b) Contribution payable under the Financial Agreement to the National Debt Sinking Fund.

(c) In respect of non-revenue producing assets such as schools, roads, etc.

Government Railways and Bus Services

Unlike the Consolidated Revenue Funds of some Australian States, the Tasmanian Fund excludes the *gross* receipts and expenditure of State business undertakings such as railways, bus services, etc. The principal charge in 1969-70 under this item was in respect of the *net* loss incurred by the Transport Commission during 1968-69 (\$1,184,896). Another major item was a contribution of \$1,011,000 to the Metropolitan Transport Trust which experienced a net trading loss of \$980,468 in 1968-69.

Roads and Bridges

The chief expenditure under this item in 1969-70 was a transfer of \$4,827,293 to the State Highway Trust Fund, representing revenue received from motor-tax and public vehicle fees. Grants totalling \$894,000 were paid from Consolidated Revenue Fund to the Transport Commission to cover the cost of vehicle registration and traffic control.

State Trust and Special Funds

State revenues are payable to Consolidated Revenue with the exception of certain revenues which have been set aside by Acts of Parliament for specific purposes and which are payable into special funds or accounts at the State Treasury. The volume of these transactions is high, \$138,717,676 being received in 1969-70, \$137,121,106 being expended and the balance in the funds changing from \$7,451,598 (1 July 1969) to \$9,048,168 (30 June 1970).

It should be noted that many accounts in the Trust and Special Funds indicate Treasury transactions which are merely supplementary to those recorded under Consolidated Revenue and Loan Funds; the following examples are given:

State Trust and Special Funds: Selected Accounts, 1969-70
('\$000)

Account	Receipts	Expenditure
Commonwealth Tax Deductions Suspense Account (a) ..	8,053.1	8,053.1
Pay-roll Tax Suspense (b)	1,201.7	1,201.7
Hydro-Electric Commission Suspense Account (c) ..	1,595.8	1,398.6

- (a) Wages and salaries included under Consolidated Revenue and Loan Fund expenditure are shown at gross value; however, the deductions applicable to wage and salary earners on Government pay-rolls are passed, via this account, to the Commonwealth.
- (b) Expenditure under Consolidated Revenue and Loan Fund includes pay-roll tax; however, pay-roll tax applicable to Government pay-rolls is passed, via this account, to the Commonwealth.
- (c) The Treasury acts as agent for meeting overseas liabilities incurred by the Hydro-Electric Commission; these liabilities, mainly incurred in the acquisition of plant and equipment, are largely accounted for in Loan Fund expenditure.

Many accounts are concerned with Government activities financed by the Commonwealth, the State acting as trustee or agent in the transactions; examples are as follows:

State Trust and Special Funds: Selected Commonwealth Accounts, 1969-70
('\$000)

Account	Receipts	Expenditure
Tasmanian University (Commonwealth Grants) Account (a)	1,472.6	1,472.6
Commonwealth Free Milk Scheme Account (b)	476.2	489.8
Home Builders Fund (c)	4,022.3	3,949.8

- (a) Treasury passes Commonwealth grants to University of Tasmania.
- (b) Education Department administers free milk scheme for school children on behalf of Commonwealth.
- (c) Agricultural Bank administers loans to home builders, the source of funds being the Commonwealth.

In the case of some accounts, there is provision for crediting the Trust and Special Funds with contributions from Consolidated Revenue, an important example being the State Highways Trust Fund:

State Trust and Special Funds: State Highways Trust Fund, 1969-70
('\$000)

Item	Receipts	Expenditure
Commonwealth Contribution	9,100.0	..
Grant from Consolidated Revenue	4,827.3	..
Roads, Bridges, Jetties, Ferries and Planning	145.4	14,004.6
Self-Balancing Entries	1,594.4	1,594.4
Fund Entries	15,667.1	15,599.0

The Forestry Fund Account records transactions under legislation requiring revenue from forestry to be paid to Consolidated Revenue, and for Consolidated Revenue to expend an equal amount on forestry in the following year:

State Trust and Special Funds: Forestry Fund Account, 1969-70
('\$000)

Item	Receipts	Expenditure
Grant from Consolidated Revenue (a)	1,598.3	..
Expenditure on Forestry .. .. .	..	1,808.6
Reimbursement—Softwood Forestry Agreement	123.6	..
Self-Balancing Entries	253.5	253.5
Fund Entries	1,975.5	2,062.2

(a) Consolidated Revenue recorded Forestry receipts of \$1,589,345 in 1968-69; this sum therefore became the 1969-70 contribution from Consolidated Revenue.

Some of the funds held in trust are not owned by the State Government, e.g. St John's Park Inmates Trust Account. Other funds are held on behalf of semi-government authorities, e.g. Agricultural Bank.

State Loan Fund

The *Public Account Act* 1962 has, *inter alia*, the following provisions relating to the Loan Fund: (i) the Governor, on Treasury advice, may make transfers between block votes as long as the total authorised amount is not exceeded; (ii) a sum of up to \$400,000 may be spent for purposes not previously authorised; (iii) for purposes previously authorised, an additional sum of up to \$1m may be spent; (iv) in instances of expenditure outside the provisions of a specific Loan Fund Appropriation Act, the ratification of such action is to be sought from Parliament before the close of the following financial year. The Act also provides that the unexpended balances of votes at the close of the financial year lapse (in contrast with previous practice when such balances were carried forward from year to year).

Expenditure from the Loan Fund is devoted to two main purposes: (i) the making of advances to State semi-government authorities; and (ii) the carrying out of the State's own works programme. Such funds, whether lent to other authorities for their works programmes or spent directly by the State, result in the creation of new capital assets, a large proportion of which are revenue earning and therefore capable of reimbursing the State for the debt charges which it has incurred. (The previous section on Consolidated Revenue Expenditure shows the *gross* and *net* expenditure on annual debt charges.)

In addition to money from loan raisings, the Loan Fund records other receipts such as repayment of advances and Commonwealth capital grants; it is usual, therefore, to record loan expenditure on both gross and net bases.

The annual net loan expenditure is, in effect, the disbursement of the new borrowings for the year, augmented or diminished by the net movement in the Loan Fund balance. The following table shows the calculation of net loan expenditure from two viewpoints: (i) as a residue from gross loan expenditure; and (ii) as the algebraic sum of new loan raisings for new capital purposes, the net movement in the Loan Fund balance and discount and capital appreciation expenses:

State Loan Fund: Calculation of Net Loan Expenditure
(\$'000)

Particulars	1967-68	1968-69	1969-70
(i) Gross Loan Expenditure	46,054	44,458	49,411
Less Repayments	2,334	2,341	2,257
Less Commonwealth Grants	1,191	r 1,952	2,086
Net Loan Expenditure	42,128	40,164	45,069
(ii) Borrowings for New Capital Purposes ..	40,651	(a) 42,141	45,370
Decrease, Loan Fund Balance	1,458	-2,070	-400
Other (b)	19	93	99
Net Loan Expenditure	42,128	40,164	45,069

(a) Includes discount (\$21,000); net amount borrowed for new capital purposes was \$42,120,000.

(b) Discount and capital appreciation items.

The following table shows gross and net loan expenditure annually:

Loan Fund: Gross and Net Loan Expenditure
(\$'000)

Year	Loan Expenditure		Year	Loan Expenditure	
	Gross	Net		Gross	Net
1952-53	40,152	26,136	1961-62 ..	32,520	30,088
1953-54	31,816	27,544	1962-63 ..	33,332	30,510
1954-55	35,310	29,378	1963-64 ..	35,354	32,905
1955-56	35,212	27,048	1964-65 ..	35,816	33,352
1956-57	23,544	22,038	1965-66 ..	39,411	36,573
1957-58	23,390	21,666	1966-67 ..	40,161	36,636
1958-59	27,610	25,112	1967-68 ..	46,054	42,128
1959-60	29,130	26,442	1968-69 ..	44,458	40,164
1960-61	33,866	30,612	1969-70 ..	49,411	45,069

The next table shows loan fund payments classified according to function:

Loan Fund Payments Classified by Function (a)
(\$'000)

Function	1967-68	1968-69	1969-70
Part 1: Net Payments by Function (b)—			
Law, Order and Public Safety—			
Police	688	499	508
Prisons	35	48	98
Other	431	450	607
Total	1,154	996	1,213

Loan Fund Payments Classified by Function (a)—continued
(\$'000)

Function	1967-68	1968-69	1969-70
Education—			
Primary	1,268	1,493	1,169
Secondary	1,224	1,093	1,125
Tertiary—			
Advanced	} 290	-81	{ 275
Technical			
University			
Other	1,029	1,280	1,527
Total	4,106	4,377	5,467
Public Health—			
Mental and Other Hospitals (excl. Repatriation) ..	3,547	4,753	4,650
Ambulances	68	43	49
Other	331	257	100
Total	3,946	5,053	4,799
Welfare	87	29	71
Development and Conservation of National Resources and Assistance to Industries—			
Agricultural, Pastoral and Dairying	368	821	873
Forestry	1,179	1,512	1,443
Mines and Minerals	2,381	-238	-242
Fisheries and Game	52	199	198
Water Supplies	2,547	1,247	620
Secondary Industries	964	743	810
Land Administration	150	41	85
Other	53	-19	319
Total	7,694	4,305	4,106
Transport and Communication—			
Roads and Bridges	1,142	756	1,048
Other	761	252	(c) 3,334
Total	1,903	1,008	4,381
Electricity (Advances to the H.E.C.)	20,000	20,725	23,125
Public Works Administration n.e.i.	2,451	2,085	1,420
Housing	-476	-397	-353
Cultural and Recreational	207	243	974
Debt services n.e.i. (State)—			
Sinking Fund and Redemption (incl. Conversion)	55,713	37,117	53,847
Loan Management	-95	-98	-81
Total	55,619	37,019	53,766
Other	1,091	1,725	-154
Part 2: Total Repayments to Loan Fund (b)	3,925	4,294	4,342
Total Payments from Loan Fund..	101,706	81,461	103,159

(a) Based on Commonwealth code developed for analysis of government sector accounts.

(b) The repayments shown in total in Part 2 have been offset against individual items in Part 1 to obtain net payments by individual Function.

(c) Includes an advance of \$2.7m to the Transport Commission to cover working expenses.

The item 'Total Repayments to Loan Fund' in the preceding table includes grants received from the Commonwealth and credited to Loan Fund (the total amount in 1969-70 was \$2,086,000). Principal Commonwealth Grants received in 1969-70 were: (i) university financial assistance grants, \$721,000; advanced education grants, \$704,000; (iii) technical training grants, \$376,000; (iv) mental health institution grants, \$103,000; (v) grants for school science laboratories, \$82,000; and (vi) school libraries grants, \$65,000. Main repayments to the Loan Fund from State sources in 1969-70 were: (i) \$488,000 under the *Industrial Development Act*; (ii) \$472,000 of rural advances recovered under the *State Advances Act* 1935; and (iii) \$167,000 repaid under the *Aluminium Industry Act* 1960.

The following table shows how a reconciliation may be obtained between total loan fund payments in the previous table and net loan fund expenditure:

Net Loan Fund Expenditure
('\$000)

Particulars	1967-68	1968-69	1969-70
Total Payments from Loan Fund	101,706	81,461	103,159
Debt Service Transactions (a)—			
Conversion (Australia)	—44,003	—27,576	—37,005
Conversion (State Savings Bank Agreement)	—960	—960	—960
Redemption from New Cash Borrowing	—10,750	—8,581	—15,882
Loan Fund Expenditure for New Capital Purposes (b)	45,993	44,344	49,312
Premiums on Redemption and Conversion of Special Bonds (a)	(c) 61	(c) 114	99
Gross Loan Fund Expenditure (b)	46,054	44,458	49,411
Total Repayments to Loan Fund (a)	—3,925	—4,294	—4,342
Net Loan Fund Expenditure (b)	42,128	40,164	45,069

(a) Items necessary for reconciliation with Treasurer's published figures are marked (b).

(b) As specified in Treasurer's Statement.

(c) Includes discount allowed on borrowings: 1967-68, \$60,690; 1968-69, \$23,489.

The relationship between aggregate net loan expenditure, total loans raised and the State Public Debt is established in the following table:

Aggregate Net Loan Expenditure and State Public Debt (a) at 30 June
('\$000)

Particulars	1968	1969	1970
Aggregate Net Loan Expenditure	634,192	674,580	719,650
Unexpended Balance, Loan Fund	1,285	3,354	3,754
Grand Total Loans Raised	635,477	677,935	723,404
Less Aggregate Redemptions From Sinking Funds	65,892	69,507	77,304
Less Liability for Exchange on Overseas Redemption	8,692	8,692	8,692
State Public Debt (a)	560,893	599,736	637,407

(a) Overseas component at exchange rates prevailing on 1 July 1927.

State Public Debt

The State Public Debt is calculated on two bases: (i) with overseas debt calculated at 'mint par of exchange', i.e. at the exchange rates prevailing on 1 July 1927. 'Mint par debt' is the official debt for the purpose of determining sinking fund contributions payable under the Financial Agreement, 1927; and (ii) with overseas debt calculated at current rates of exchange.

The following table shows the State Public Debt calculated on both bases:

State Public Debt at 30 June 1970: At Mint Par of Exchange and at Current Rates of Exchange

Place in Which Debt Repayable	\$Aust. at Mint Par of Exchange		\$Aust. at Current Rates of Exchange	
	Conversion Rate of \$A (a)	Debt (\$'000)	Conversion Rate of \$A (b)	Debt (\$'000)
Australia		625,575		625,575
London	£0.5 sterling	6,674	£0.46667 sterling	7,151
New York	U.S. \$2.43325	4,178	U.S. \$1.1200	9,076
Canada	C. \$2.43325	368	C. \$1.1525	777
Switzerland	S. Francs 12.61965	293	S. Francs 4.8978	756
Netherlands	Guilders 6.053925	319	Guilders 4.0544	477
Total		637,407		643,811

(a) Exchange rates at 1 July 1927 (rate for £A 0.5).

(b) Exchange rates at 30 June 1970 for \$A.

The most significant changes between the 1927 rates of exchange and those current today occurred in three stages: (i) 1930, when the Australian pound was devalued 20 per cent in relation to sterling; (ii) 1949, when the Australian pound was devalued by 30.5 per cent parallel to a similar devaluation in sterling; and (iii) 1967, when the pound sterling was devalued 14.3 per cent (but the decision was taken not to devalue the \$A).

The growth of the public debt, expressed at mint par of exchange, is shown in the following table:

State Public Debt: Place of Flotation and Nominal Interest Payable (\$'000)

At 30 June	Debt Redeemable In—						Total Debt	Nominal Interest (a)
	London	New York	Switzerland	Canada	Netherlands	Australia		
1960	14,682	2,482	..	..	..	313,880	331,044	13,806
1961	14,662	3,056	293	505	..	336,042	354,559	15,362
1962	14,652	3,572	293	505	399	359,830	379,252	16,658
1963	16,092	4,846	293	505	399	382,458	404,594	18,012
1964	17,724	4,684	293	486	399	408,724	432,311	19,259
1965	17,544	4,430	293	473	399	439,163	462,302	21,707
1966	13,733	5,743	293	444	399	471,045	491,658	23,987
1967	13,643	5,284	293	419	399	504,880	524,918	25,940
1968	8,382	4,913	293	393	372	546,539	560,893	27,778
1969	8,082	4,549	293	387	346	586,078	599,736	30,040
1970	6,674	4,178	293	368	319	625,575	637,407	32,939

(a) Interest has been calculated on the face value of individual loans outstanding at 30 June; no allowance has been made for variations in exchange rates since 1 July 1927.

A notable feature of the State public debt is that approximately 98 per cent of indebtedness (at mint par of exchange rates) is now domiciled in Australia. There has been a gradual change from the situation which existed a century ago when nearly all loans were financed in London. In 1870, the State's public debt (\$2,537,400) was wholly redeemable in London and even in 1900, less than ten per cent of the State debt was redeemable in Australia.

Public Debt Transactions

The following table shows particulars of loans raised and redeemed annually during the most recent three-year period (expressed at mint par of exchange) and also the transactions for the current year expressed at current rates of exchange. It will be observed that redemption of loans falling due in any particular year is achieved, in the main, by conversion (i.e. by renewal of the original loans on new terms and conditions):

State Public Debt: Conversion and Redemption
(\$'000)

Particulars	At Mint Par of Exchange			At Current Rates
	1967-68	1968-69	1969-70	1969-70
Loans Raised For—				
Additional Borrowings	40,651	42,141	45,370	45,370
Conversion Purposes	44,963	28,536	37,965	37,965
Redemption, Maturing Loans	12,772	8,584	15,882	15,882
Total Raisings	98,387	79,261	99,217	99,217
Deduct—				
Loans Redeemed—				
By Conversion	44,963	28,536	37,965	37,965
From New Cash Raisings	12,372	8,491	15,783	15,783
From National Debt Sinking Fund ..	5,076	3,391	7,797	8,329
Net Increase in Public Debt ..	35,975	38,843	37,672	37,140
Debt at End of Year ..	560,893	599,736	637,407	643,811

The following table shows the due dates of loans outstanding *at current exchange rates* (i.e. at the rates prevailing at 30 June 1970) and also the country in which the loans will fall due.

Due Dates of Loans at 30 June 1970
(\$'000)

Maturing During—	Amount Maturing				Total
	In Australia	In London	In New York	Elsewhere Overseas	
1970-71	74,166	..	216	..	74,383
1971-72	51,420	..	339	..	51,759
1972-73	40,895	..	800	..	41,695
1973-74	35,066	..	..	..	35,066
1974-75	26,000	1,779	..	..	27,778
1975-76	33,881	180	..	756	34,818
1976-77	26,003	..	..	..	26,003
1977-78	30,900	1,479	..	..	32,379
1978-79	19,822	1,746	587	..	22,155
1979-80 to 1983-84	75,933	1,967	4,231	1,253	83,385
1984-85 to 1988-89	125,407	..	2,903	..	128,310
1989-90 to 1993-94	40,185	..	..	..	40,185
1994-95 to 2005-06	45,899	..	..	..	45,899
Total ..	625,575	7,151	9,076	2,009	643,811

The following table shows the rates of interest which were payable on the State Debt and the portions of the debt at each rate in Australia, London, New York and elsewhere overseas respectively (*at current exchange rates*):

Rates of Interest on Public Debt at 30 June 1970
(**\$'000**)

Rate of Interest (Per Cent)	Amount Maturing				Total
	In Australia	In London	In New York	Elsewhere Overseas	
1.00	467	..	..	..	467
3.25 .. ..	..	1,779	..	..	1,779
4.125	12,480	..	..	..	12,480
4.1875	1,812	..	..	..	1,812
4.25	22,064	..	..	..	22,064
4.3125	850	..	..	..	850
4.4375	2,092	..	..	..	2,092
4.50	33,798	..	216	756	34,770
4.60	2,766	..	..	..	2,766
4.625	2,954	..	..	..	2,954
4.75	37,522	..	800	..	38,322
4.80	26,316	..	..	..	26,316
4.90	11,162	..	..	..	11,162
5.00	194,655	..	926	477	196,058
5.15	1,791	..	..	..	1,791
5.20	11,307	..	..	..	11,307
5.25	126,740	..	1,455	..	128,195
5.30	2,791	..	..	..	2,791
5.375	17,362	..	..	..	17,362
5.40	43,993	..	..	..	43,993
5.50	5,990	5,023	2,777	..	13,790
5.60	10,323	..	..	..	10,323
5.75	5,574	..	2,903	777	9,254
5.80	7,093	..	..	..	7,093
5.90	3,450	..	..	..	3,450
6.00	13,292	349	..	..	13,641
6.40	1,972	..	..	..	1,972
6.50	15,988	..	..	..	15,988
6.80	2,873	..	..	..	2,873
7.00	6,099	..	..	..	6,099
Total ..	625,575	7,151	9,076	2,009	643,811

The next table summarises the transactions of the National Debt Commission in relation to the Tasmanian Public Debt:

National Debt Commission: Transactions in Respect of Tasmanian Public Debt
(**\$'000**)

Particulars	1967-68	1968-69	1969-70
Balance at Beginning of Period	348	81	2,354
Contributions—			
From—Commonwealth Government	1,398	1,485	1,598
State Government	4,162	4,523	4,861
Interest Received (Net)	12	—12	67
Funds Available	5,921	6,078	8,880
Deduct			
Redemptions and Re-Purchases (a)—			
At Mint Par of Exchange	5,076	3,391	7,797
Exchange Adjustment	764	333	359
Balance at End of Period	81	2,354	724

(a) The sum of the two specified items represents the cost at current rates of exchange.

The National Debt Commission was established as part of the 1927 Financial Agreement and its function is to administer one consolidated sinking fund in respect of the debt of the Commonwealth and States. Sinking fund moneys are used to redeem unconverted securities at maturity and to re-purchase securities on the stock market. The obligations of the States and the Commonwealth in contributing to the consolidated sinking fund are set out earlier in this chapter in a section headed 'Payments under the Financial Agreement (1927)'; although the Commission operates a consolidated fund, it is possible to obtain statements for its operations with respect to each State's public debt.

Taxation in Tasmania

Introduction

As citizens of the Commonwealth, Tasmanians are subject to taxes levied both by the State and the Commonwealth. The relative magnitude and severity of the two forms of taxation are compared in the following table:

Taxation: State of Tasmania and Commonwealth, 1969-70 (a)

Tax	Amount (\$'000)		Per Head of Population (\$)	
	Tasmania (b)	Common- wealth (c)	Tasmania	Common- wealth
Income .. .. .	..	4,052,859	..	325.71
Customs and Excise .. .. .	..	1,352,814	..	108.72
Sales .. .. .	..	568,673	..	45.70
Pay-Roll .. .. .	..	230,469	..	18.52
Probate and Succession Duties ..	3,263	71,332	8.35	5.73
Motor	6,797	..	17.39	..
Stamp Duties	4,210	..	10.77	..
Receipts Duty	1,202	..	3.08	..
Land	2,633	..	6.74	..
Racing	1,409	..	3.61	..
Liquor	1,135	..	2.90	..
Levy on Insurance Companies for				
Fire Authorities	666	..	1.70	..
Entertainment	89	..	0.23	..
Broadcast Listeners' and Television				
Viewers' Licences .. .. .	..	48,389	..	3.89
All Other	48	59,090	0.12	4.75
Total	21,452	6,383,626	54.89	513.03

(a) Collections from all sources, including amounts paid to special funds.

(b) State taxes collected by Tasmanian Government and other State authorities.

(c) Commonwealth taxes collected for Australia as a whole.

In addition to the taxes shown in the above table Tasmanian property owners also pay rates and licence fees to local government authorities. Total rates and licence fees collected during 1969-70 amounted to \$17,361,000 or \$44.42 per head of mean population.

Assuming that Tasmanians contributed to Commonwealth taxation in strict proportion to the relative mean populations of the State and the Commonwealth, it would be theoretically correct to add the two per capita figures (\$54.89 and \$513.03) and arrive at a figure of \$567.92 as the total per capita taxation of the Tasmanian and Commonwealth Governments within the State. An alternative way of examining the problem is to refer to total Commonwealth taxes collected in Tasmania but this measure is unsatisfactory for a number of reasons, the chief defects being:

- (i) Central Office collections of Commonwealth taxation ceased at 30 June 1970 and for the income years after 1969-70, all assessments are being handled in State Offices of the Taxation Department. The effects of this change are deceptive because income tax *collected in Tasmania* does not necessarily directly relate to income *earned in Tasmania* since a company with branches in Tasmania but with head-office in Melbourne may make its return to the Victorian Taxation Office.
- (ii) Goods shipped to Tasmania will, in some cases, already have been taxed in another State in respect of customs, excise or sales taxes. Even though other States are credited with the collection of these three taxes, the fact remains that Tasmanians bear their incidence in the form of increased commodity prices. The amount of tax collected in other Australian States on goods shipped to Tasmania is not known.

Estimated Incidence

The following table shows actual collections of Commonwealth taxes in the State and also the estimated incidence of taxes collected elsewhere in Australia:

**Taxation: Collected by Commonwealth in Tasmania and Elsewhere and
Estimated Incidence in Tasmania
(\$'000)**

Tax	1967-68	1968-69	1969-70
Collected in Tasmania—			
Income Tax (a)	65,628	71,619	79,728
Estate Duty (a)	802	1,458	1,518
Wool Tax	278	374	283
Export Charges	142	174	191
Pay-roll Tax	5,176	5,556	6,089
Gift Duty	113	200	200
Stevedoring Industry Charge	840	963	1,058
Butter Fat Levy	136	157	159
Other Levies	69	78	86
Broadcasting Listeners' and Television Viewers' Licences	1,157	1,314	1,397
Sales Tax	10,762	13,025	12,983
Customs	3,230	2,686	3,231
Excise	21,980	23,141	23,668
Other	14	25	38
Total Collected in Tasmania	r 110,326	r 120,771	130,629
Collected Elsewhere in Australia (b)—			
Sales Tax	r 903	r 754	2,734
Customs	r 5,509	r 6,970	8,200
Excise	r 1,961	r 2,020	2,291
Estimated Incidence (a)	r 118,699	r 130,515	143,856

(a) Includes Central Office collections.

(b) Estimated; goods on which these taxes were paid are assumed to have been sold in Tasmania.

In estimating the collection in other Australian States of the main taxes affecting Tasmanians, account was taken of selected sales figures derived from the latest Retail Census which show Tasmanian *per head* sales to be 88 per cent of the corresponding Australian figure. Accordingly the *per head* incidence of customs, excise and sales taxes in Tasmania was taken to be 88 per cent of the Australian *per head* collection figure for each tax.

Commonwealth Income Tax

Income tax, the most important revenue raising levy in the Commonwealth was introduced into Australia in 1884 by the colony of South Australia. In course of time this form of taxation was adopted by all the Australian governments between 1884 and 1915. From 1915 to 1942 the State and Commonwealth governments imposed taxation concurrently.

Uniform taxation on incomes throughout Australia was adopted in 1942 when the Commonwealth Government became the sole authority levying this tax; the war emergency led to this development.

Certain types of income are exempt from tax in Australia. These include income from gold and uranium mining; war, invalid, age and widows' pensions; child endowment; and unemployment and sickness benefits.

Expenses incurred in producing assessable income and losses incurred in previous years are allowable deductions in calculating taxable income.

For the income year 1970-71, tax was payable on the incomes of individuals and commenced at a taxable income of \$417. However, certain limitations applied to the tax payable by aged persons, over 65 years of age in the case of a male and over 60 years in the case of a female. Concessional deductions were allowed to taxpayers on account of dependants, certain medical and dental expenses, life insurance premiums and superannuation contributions (up to \$1,200), medical or hospital benefit fund contributions and education expenses (up to \$300 per dependant), etc.; these outlays can be subtracted from gross income to calculate taxable income. Dependants included spouse, parents, parents-in-law, children under sixteen years of age, student children under 21 years of age, invalid relative over sixteen years of age, or daughter-housekeeper for widow or widower so long as they were maintained wholly or in part by the taxpayer during the year. A concessional deduction might be allowed for a housekeeper having the care of children under sixteen years of age or of an invalid relative where the taxpayer did not contribute to the maintenance of a spouse or daughter-housekeeper. The maximum concessional deduction allowable in respect of each type of dependant and housekeeper was:

spouse, \$312; parent or parent-in-law, \$312; children under sixteen years: one child, \$208, other children, \$156; student child, sixteen to 21 years, \$208 each; invalid relative not less than sixteen years, \$208 each; housekeeper or daughter-housekeeper, \$312.

From 1954-55 to 1969-70 there were few variations in the rates of income tax on individuals, the chief change relating to a general five per cent rebate of tax operative in the years 1959-60, 1961-62, 1962-63 and 1963-64. For the year 1964-65, the rebate was withdrawn and from 1965-66 a 2½ per cent levy was added. From 1963-64, the minimum taxable income was raised from the previous \$210 to \$417. The 1970-71 budget introduced major revisions of rates for individuals: (i) on incomes up to \$10,000 a reduction of 10 per cent in tax rates; (ii) on incomes from \$10,000 to \$20,000 a reduction tapering down to 4.4 per cent (and ceasing altogether at \$32,000). The new tax rates applied to the 1970-71 income year but were not introduced into pay-as-you-earn deductions until 1 October 1970.

In the budget of August 1971 the Commonwealth Treasurer announced a further minor revision in the rates of personal income tax. The 2½ per cent

levy was increased to five per cent. The new scale of tax instalment deductions from wages and salaries became effective from 1 October 1971. Doubling of the levy is expected to yield an extra \$68m during 1971-72.

Total annual increases in income tax payable on selected grades of taxable income from the levy (with taxable income in brackets) are: \$1.14 (\$1,000); \$4.90 (\$2,000); \$17.36 (\$4,000); \$34.76 (\$6,000); \$55.18 (\$8,000); \$78.48 (\$10,000); \$104.41 (\$12,000); \$166.22 (\$16,000).

The following table shows the rates of Income Tax for individuals for the income year 1970-71:

Australia: Income Tax Payable on Selected Incomes, Income Year 1970-71 (\$)

Taxable Income		Tax Payable	Taxable Income		Tax Payable
417	.. ..	0.46	6,800	.. ..	1,703.65
600	.. ..	14.45	7,200	.. ..	1,856.19
800	.. ..	29.62	7,600	.. ..	2,036.16
1,000	.. ..	49.50	8,000	.. ..	2,207.13
1,200	.. ..	72.67	8,400	.. ..	2,387.12
1,400	.. ..	98.91	8,800	.. ..	2,567.11
1,600	.. ..	128.22	9,200	.. ..	2,757.76
1,800	.. ..	160.61	9,600	.. ..	2,948.41
2,000	.. ..	196.08	10,000	.. ..	3,139.06
2,400	.. ..	276.03	11,000	.. ..	3,657.71
2,800	.. ..	366.64	12,000	.. ..	4,176.36
3,200	.. ..	466.68	13,000	.. ..	4,754.46
3,600	.. ..	576.15	14,000	.. ..	5,332.56
4,000	.. ..	694.23	15,000	.. ..	5,910.66
4,400	.. ..	825.02	16,000	.. ..	6,488.76
4,800	.. ..	955.81	17,000	.. ..	7,128.36
5,200	.. ..	1,097.26	18,000	.. ..	7,767.96
5,600	.. ..	1,238.71	19,000	.. ..	8,407.56
6,000	.. ..	1,390.41	20,000 (a)	.. ..	9,047.16
6,400	.. ..	1,542.11	.. ..	.. ..	.. ..

(a) Income in excess of \$20,000 was taxed at 68.37 cents for each dollar of excess.

A system operates whereby the majority of taxpayers have regular deductions made from their salaries or wages, i.e. the 'pay-as-you-earn' principle. The amounts deducted are regulated so that the employee will have paid the approximate amount of his taxation by the end of the income year when he makes a return in which he may claim the refund of any overpayment of taxation instalments.

The next table shows the number of taxpayers, taxable income and income tax assessed during the year 1969-70 (Income Year: 1968-69).

The following definitions apply to the table:

- (i) Actual Income: Gross income *including exempt income* less expenses incurred in earning that income.
- (ii) Individuals: *Excluding companies*. Residents assessed both in Tasmania and at Central Office, also non-residents assessed in Tasmania.
- (iii) Taxable Income: Actual income *less* exempt income and *less* allowable deductions.

Tasmania, Income Tax: Income Year 1968-69
Individuals—Residents and Non-Residents

Grade of Actual Income	Taxpayers	Taxable Income			Net Income Tax Assessed
		Salaries and Wages	Other	Total	
\$	no.	\$'000	\$'000	\$'000	\$'000
417- 599 ..	4,615	1,991	285	2,276	45
600- 799 ..	5,303	2,915	512	3,427	108
800- 999 ..	5,494	3,794	694	4,488	197
1,000- 1,199 ..	6,396	5,460	832	6,292	348
1,200- 1,399 ..	6,475	6,439	1,069	7,508	495
1,400- 1,599 ..	6,780	7,632	1,353	8,985	680
1,600- 1,799 ..	7,453	9,386	1,729	11,116	944
1,800- 1,999 ..	7,702	10,975	1,746	12,722	1,192
2,000- 2,199 ..	7,319	11,072	1,951	13,023	1,311
2,200- 2,399 ..	7,703	12,206	2,274	14,481	1,544
2,400- 2,599 ..	7,762	13,077	2,419	15,496	1,743
2,600- 2,799 ..	7,845	14,401	2,254	16,654	1,974
2,800- 2,999 ..	7,803	15,095	2,441	17,537	2,176
3,000- 3,999 ..	33,026	74,059	11,548	85,606	11,989
4,000- 5,999 ..	23,880	69,954	15,953	85,907	15,535
6,000- 7,999 ..	5,349	18,878	9,024	27,902	6,510
8,000- 9,999 ..	1,701	6,681	5,175	11,856	3,307
10,000-19,999 ..	1,606	5,535	11,986	17,520	6,368
20,000-29,999 ..	181	686	3,096	3,782	1,797
30,000 and over ..	43	179	1,387	1,565	871
Total ..	154,436	290,413	77,728	368,142	59,135

Companies (Income Tax)

The tax payable by companies for the financial year 1970-71 is based on income derived during the year ended 30 June 1970 or substituted accounting period. (In the case of tax on individuals, financial year and income year are usually synonymous.)

The following table shows the rates of tax and contribution payable by companies for the 1970-71 financial year:

Rates of Income Tax Contribution
Companies: Financial Year 1970-71

Scale	Taxable Income	
	Up to \$10,000	Balance
	cents per \$	cents per \$
A	32.5	42.5
B	37.5	47.5
C	42.5	47.5
D	37.5	37.5

The following shows the application of the above scales to the various types of company:

Private: (A) except that 50 cents in the \$ was payable on the undistributed amount.

Co-operative: (B).

Life Assurance: If purely mutual (A). Other Life Assurance (if resident) mutual income (A); other income (C) except that maximum other income subject to 42.5 cent rate is \$10,000 less mutual

income; if non-resident, mutual income (A), dividend income (B), other income (C) except that maximum dividend income subject to 37.5 cent rate is \$10,000 less mutual income, and maximum other income subject to 42.5 cent rate is \$10,000 less the sum of dividend and mutual income.

Non-Profit: Friendly Society Dispensary (D); other (B).

Other Companies: Resident (C); non-resident—dividend income (B), other income (C) except that maximum other income subject to 42.5 cent rate is \$10,000 less dividend income.

State Taxation

In the section on Consolidated Revenue, taxes collected by the Tasmanian Government were shown in summarised form.

The next table gives full details of State Taxation. It should be noted that certain taxes are reserved for special purposes. Examples are: (i) Land Tax—although this item is recorded as a Consolidated Revenue receipt, it was passed to the Transport Commission; however, this practice was discontinued in 1969-70; (ii) Motor Taxation—the 'motor tax' and 'public vehicle fees' components of this item (\$4,827,000 in 1969-70) are passed from Consolidated Revenue to the State Highway Trust Fund; and (iii) Racing and Gaming Taxes—part of the 'paid to special funds' item is passed to the racing clubs and the remainder spent on administration of racing.

State Taxation Collections (a)
(\$'000)

Tax	1967-68	1968-69	1969-70
Deceased Persons' Estates Duties	2,525	3,029	3,263
Entertainments Tax	72	73	89
Stamp Duties (excluding Bookmakers' Tickets)—			
Cheques	581	611	643
Bills of Exchange and Lading	2	3	3
Hire-Purchase Agreements	484	483	504
Legal Documents, etc.	1,247	1,325	1,478
Adhesive Revenue Stamps	566	644	419
Insurances	746	936	1,034
Marketable Securities	49	80	129
Receipts Duty .. .. .	..	115	1,202
Racing and Gaming Taxes—			
Paid to—Consolidated Revenue	807	826	883
Special Funds	513	487	525
Land Tax	2,271	2,352	2,633
Motor Taxation—			
Paid to—Consolidated Revenue	r 5,855	r 6,368	6,718
Special Funds	r 79	r 77	80
Tax paid to Fire Authorities (b)	364	661	666
Liquor Tax and Related Licences—			
Tax	830	944	998
Publicans' Licences, etc.	23	25	19
Wholesale Licences	93	98	113
Registration of Clubs	4	5	5
Sundry Licences—			
Animals' and Birds' Protection Act	23	22	37
Auctioneers and Estate Agents	7	8	6
Other (including Firearms Act)	5	4	5
Total	r 17,145	r 19,176	21,452

(a) Collections from all sources of taxation, including amounts paid to special funds.

(b) Paid by insurance companies to the Fire Brigades Commission and, from 1 July 1968, to the Rural Fires Board as well.

State Land Tax

The rates of land tax assessed on urban unimproved land values for the year 1969-70 are shown in the following table:

Selected Rates of State Land Tax (a): Urban Land, 1969-70
(£)

Taxable Value (b)			Tax Payable	Taxable Value			Tax Payable
1,000	..	..	2	15,000			105
2,000	..	..	5	25,000			225
4,000	..	..	13	50,000			575
6,000	..	..	23	100,000			1,575
10,000	..	..	55	150,000			2,825

(a) Tax on unspecified values may be calculated by simple proportion, e.g. tax on \$5,750 equals \$13 plus 1,750/2,000 (\$23 less \$13) i.e. \$21.75. Land values exceeding \$150,000 were further taxed at 3 cents in the \$ on the excess.

(b) Properties having an unimproved value of less than \$1,000 are not subject to land tax.

The rates of land tax assessed on rural land values for the year 1969-70 are shown in the following table:

Rates of State Land Tax: Rural Land, 1969-70

Unimproved Value (£)	Taxable Value	Tax Rate
1-10,000	Nil	Nil
10,001-15,000	Three times the unimproved value less \$30,000	As for Urban land
15,001 and over	Unimproved value	As for Urban land

The following table summarises the value of urban, rural and composite properties and the tax assessed on each:

State Land Tax: Value of Properties and Tax Assessed
(£'000)

Year	Gross Unimproved Value				Tax Assessed			
	Urban	Rural	Composite (a)	Total	Urban	Rural	Composite (a)	Total
1965-66 ..	200,514	99,253	17,969	317,735	1,686	142	214	2,043
1966-67 ..	211,334	98,382	19,428	329,145	1,709	158	241	2,109
1967-68 ..	221,645	108,474	21,544	351,664	1,773	238	280	2,291
1968-69 ..	219,577	134,405	21,038	375,020	1,857	247	274	2,379
1969-70 ..	254,833	133,534	24,344	412,710	2,097	269	306	2,672

(a) Properties made up of both urban and rural land.

State Deceased Persons' Estates Duties

The legislation dealing with State Deceased Persons' Estates Duties is contained in Acts No. 42 of 1957 and No. 62 of 1962. The following table gives details of assessments for 1969-70:

State Deceased Persons' Estates Duties
Number of Estates, Net Value and Tax Assessed, 1969-70

Grade of Dutiable Value	Estates		Net Value as Assessed	Total Duty Assessed (a)	Average Duty	
	Examined	Taxable			Per Estate Examined	Per Taxable Estate
\$	no.	no.	\$'000	\$'000	\$	\$
1- 500 ..	113	5	15	..	1.3	29.0
501- 1,000 ..	75	12	56	1	13.2	82.6
1,001- 1,500 ..	73	21	89	1	19.3	67.2
1,501- 2,000 ..	76	23	130	3	38.2	126.2
2,001- 3,000 ..	120	31	287	5	44.9	173.8
3,001- 4,000 ..	118	32	396	9	73.8	272.0
4,001- 5,000 ..	100	69	439	11	111.1	161.0
5,001- 6,000 ..	96	68	497	15	160.4	226.5
6,001- 8,000 ..	202	137	1,339	45	224.3	330.7
8,001- 10,000 ..	139	114	1,165	49	351.0	427.9
10,001- 15,000 ..	200	144	2,220	106	530.4	737.2
15,001- 20,000 ..	110	110	1,667	100	911.9	911.9
20,001- 30,000 ..	146	146	3,070	249	1,708.6	1,708.6
30,001- 40,000 ..	65	65	1,636	151	2,139.4	2,319.4
40,001- 50,000 ..	64	63	2,079	203	3,176.9	3,227.3
50,001-100,000 ..	130	130	5,882	755	5,809.8	5,809.8
100,001 and over ..	79	79	8,763	1,810	22,910.0	22,910.0
Adjustments ..	..	..	..	8	..	..
Total ..	1,906	1,249	29,730	3,507	..	..

(a) Rates of duty and levels of exemption vary according to the class of beneficiary and the type of asset contained in the estate.

Motor Taxation

The chief components of motor taxation are: (i) motor tax assessed on a power-weight formula; (ii) vehicle registration fees; (iii) drivers' and riders' licences; and (iv) other registration fees mainly related to public vehicles.

Details of motor taxation collections are shown in the following table:

State Motor Taxation
(\$'000)

Particulars	1967-68 r	1968-69 r	1969-70
Motor Tax	4,071	4,256	4,463
Public Vehicle Fees (a)	404	408	445
Stamp Duty on—Third Party Insurance	275	291	294
Vehicle Registration	189	342	363
Other Traffic Fees (b)	995	1,148	1,233
Total	5,934	6,445	6,797
Paid into Consolidated Revenue Fund	5,855	6,368	6,718
Retained by Transport Commission	79	77	80

(a) Includes public vehicle fees retained by Transport Commission.

(b) Includes registration fees, licences, number plate charges, transfer fees and learners' permits.

'Motor tax' plus most of the item 'public vehicle fees' shown in the above table is paid to the State Highway Trust Fund. (The amount paid over in 1969-70 was \$4,827,000.)

Racing Taxation

Under the *Racing and Gaming Act 1952* and amending legislation, licensed bookmakers pay a turnover commission of $2\frac{1}{2}$ per cent on all bets made. Also racing clubs are required to pay a totalisator tax on turnover at the rate of five per cent in respect of race meetings conducted on race courses in a city area, and $2\frac{1}{2}$ per cent in the case of other meetings. Details of racing taxation collections and distribution are shown in the next table.

State Racing Taxation: Collection and Distribution (a)
(**\$'000**)

Particulars	1967-68	1968-69	1969-70
RACING TAXATION RECEIPTS			
Totalisator Tax	61	54	59
Bookmakers' Commission and Licences	1,069	1,060	1,140
Stamp Duty on Bookmakers' Tickets (b)	192	199	210
Total	1,321	1,313	1,409
DISTRIBUTION OF RACING TAXATION RECEIPTS			
Paid into Consolidated Revenue (b)	807	826	883
Adjustment (c)	3	— 8	14
Expenses—Racing Commission	40	43	46
Stipendiary Stewards	11	12	14
Commission Payable to Racing Clubs	420	400	416
Racing Assistance Fund	40	40	37
Total	1,321	1,313	1,409

(a) Accounting year ended 31 July except for items marked (b).

(b) Financial year ended 30 June.

(c) For different accounting periods.

Following amendment of the *Racing and Gaming Act* in 1971 betting turnover tax is now paid into Consolidated Revenue. Previously two charges had been made on the tax: (i) the administrative costs of the Racing Commission; and (ii) a contribution to the racing assistance fund. Both charges were limited to a maximum of \$40,000.

The turnovers on which taxes were levied are as follows:

Betting: Bookmakers' Turnover and Totalisator Investments
(**\$'000**)

Particulars	1967-68	1968-69	1969-70
Licensed Bookmakers' Turnover	42,090	41,705	44,899
Totalisator Investments	1,277	1,145	1,250
Total Betting Turnover	43,367	42,849	46,149

State Taxation on Lotteries

From 1942 (when the Commonwealth Government became the sole collector of income tax), lotteries conducted from Hobart by Tattersalls (George Adams Estate) were Tasmania's chief source of revenue from State taxation. On 14 July 1954, the promoters transferred their operations to Victoria. A new organisation—Tasmanian Lotteries—was granted a licence and operated until 30 September 1961, when the proprietor surrendered the licence. No operator is now licenced.

The following table records the contributions made to Consolidated Revenue by Lotteries taxation from 1949-50:

Taxation and Stamp Duties Imposed on Lotteries: Paid to Consolidated Revenue (\$'000)

Year	Taxation and Stamp Duties	Year	Taxation and Stamp Duties	Year	Taxation and Stamp Duties
1949-50 ..	2,152	1953-54 ..	3,032	1957-58 ..	740
1950-51 ..	2,430	1954-55 ..	1,152	1958-59 ..	432
1951-52 ..	2,634	1955-56 ..	2,114	1959-60 ..	278
1952-53 ..	2,952	1956-57 ..	1,930	1960-61 ..	60

In September 1960, the *Racing and Gaming Act* 1952 was amended to permit agreements with other States for the sale of their lottery tickets in Tasmania. Under an agreement with the Victorian Government, Tattersalls were allowed to sell tickets through accredited Tasmanian representatives; the Victorian Government was to pay quarterly to the Tasmanian Government 15½ per cent of the value of subscriptions made as a result of this concession.

For the purpose of Public Finance Statistics, these amounts are classified not as 'taxation' but as 'payments from other States'.

The following table shows the payments made under the interstate agreement since 1962-63.

Payments to Tasmanian Government Based on Sale of Tattersalls Lottery Tickets (\$)

Year	Amount	Year	Amount
1962-63	134,476	1966-67	140,995
1963-64	145,394	1967-68	138,372
1964-65	146,500	1968-69	141,624
1965-66	152,338	1969-70	(a)150,054

(a) Includes \$33,858 due for the year 1969-70 but not received until early 1970-71.

Liquor Tax and Related Licences

The State raises revenue from hotels, clubs, restaurants and liquor wholesalers by: (i) licensing; and (ii) imposing a levy related to turnover. Originally a liquor tax was charged on liquor purchases by hotels, etc. and on wholesalers' direct sales to the public, the year for calculating taxable values and the year of collection being the same. During 1965-66, the *Licensing Act* 1932 was amended to substitute 'percentage fees' based on similar values except that they were those calculated for the year *preceding* collection.

**Liquor Tax and Related Licences Collected Under the Licensing Act
(\$'000)**

Tax or Licence	1965-66	1966-67	1967-68	1968-69	1969-70
Liquor Tax	589				
Percentage Fees	49	749	830	944	998
Publicans' and Other Licences Under the Licensing Act	30	39	23	25	19
Wholesale Licences	67	95	93	98	113
Registration of Clubs	4	4	4	5	5
Total	739	887	950	1,072	1,135

PRIVATE FINANCE

Overseas Exchange Rates

The next table shows overseas exchange rates in operation until March 1971:

Exchange Rates: (a) Overseas Currency to Australian Dollars

Country	Unit of Overseas Currency	1967-68	1968-69	1969-70	March 1971
New Zealand (b) ..	Dollars	0.910	0.998	0.998	0.998
United Kingdom (b) ..	Pound Stg	0.436	0.465	0.465	0.465
Belgium	Francs	54.99	55.39	55.22	55.45
Canada	Dollars	1.20	1.19	1.19	1.13
Ceylon	Rupees	5.99	6.57	6.59	6.58
China (Mainland) (c) ..	New Yuan	2.74	2.72	2.72	2.74
France	Francs	5.45	5.49	6.08	6.17
Germany (West) ..	Deutsche Marks	4.43	4.40	4.16	4.06
Hong Kong	Dollars	6.61	6.76	6.74	6.74
India	Rupees	8.33	8.33	8.33	8.33
Italy	Lire	690.00	689.00	696.00	696.00
Japan	Yen	400.95	396.55	396.96	399.59
Malaysia	Dollars	3.382	3.38	3.40	3.41
Netherlands	Guilders	3.99	40.1	4.02	4.02
Pakistan	Rupees	5.28	5.28	5.28	5.28
Singapore	Dollars	3.40	3.38	3.40	3.41
South Africa	Rands	0.795	0.795	0.795	0.795
Switzerland	Francs	4.81	4.77	4.78	4.81
U.S.A.	Dollars	1.11	1.11	1.11	1.13
U.S.S.R. (c)	Roubles	1.004	1.004	1.004	1.004

(a) Average telegraphic transfer selling rates at Sydney.

(b) Usual basis of quotation: (i) \$A to \$N.Z. 1; (ii) \$A to £1 Stg. Value quoted is an inversion.

(c) Rates of exchange used in converting import values to Australian currency for purposes of calculating customs duty.

Banking

Types of Banks

Banks in Tasmania can be classified by ownership as follows: (i) Government—the Reserve Bank of Australia, the Commonwealth Development Bank of Australia, the Commonwealth Trading Bank of Australia, and the Commonwealth Savings Bank; (ii) Private—the private trading banks and the private savings banks; and (iii) Trustee—the Hobart and the Launceston Savings Banks. The Agricultural Bank is *not* a bank for the purpose of these statistics.

For statistical purposes, such a classification is not helpful since banks, both government and private, may be engaged in the same type of activity. Hence, the classification in actual use is one which groups banks according to their type of activity, not according to their ownership. The major banking statistics for the State are presented in two distinct series under the headings 'Cheque-Paying Banks' and 'Savings Banks'.

Cheque-Paying Banks

The following institutions in Tasmania are classified, for statistical purposes, as 'cheque-paying banks': Commonwealth Trading Bank of Australia; Australia and New Zealand Banking Group; Bank of New South Wales; Commercial Bank of Australia Ltd; Commercial Banking Company of Sydney Ltd; National Bank of Australasia Ltd; and the Bank of Adelaide.

Savings Banks

In the 1950s, only three savings banks operated branches in Tasmania: Hobart Savings Bank, Launceston Savings Bank (both trustee savings banks) and Commonwealth Savings Bank. The trustee savings banks date from early colonial days, that at Launceston opening in 1835, and at Hobart in 1845. In recent years, private trading banks have opened savings bank subsidiaries in the State, the relevant dates being A.N.Z., September 1959; Bank of N.S.W., September 1961; E. S. & A., October 1961; National, May 1962; Commercial (of Australia), July 1962; Commercial (of Sydney), March 1963; and Bank of Adelaide Savings Bank Ltd, November 1970. All banks which previously operated as cheque-paying banks now provide savings bank facilities.

Following the 1969 merger of the E. S. & A. and A.N.Z. banks and the establishment of the Bank of Adelaide in 1970 there are nine separate enterprises operating savings bank business within the State. Savings banks also offer cheque facilities to customers; however, for statistical purposes their cheque operations are included in 'savings banks' statistics.

Banking Legislation

Under Section 51 of the Commonwealth Constitution, the Commonwealth Parliament has power to legislate with respect to 'banking, other than State banking; also State banking extending beyond the limits of the State concerned, the incorporation of banks, and the issue of paper money'. The principal Commonwealth Acts at present in force relating to banking are:

The Reserve Bank Act 1959-1966: Provision for the constitution and management of the Reserve Bank of Australia and the management of the Australian note issue. (Central banking functions had previously been vested in the Commonwealth Bank of Australia.)

The Banking Act 1959-1967: Objects are (i) to provide a legal framework uniform throughout Australia for regulating the banking system; (ii) to safeguard depositors of the banks from loss; (iii) to provide for the co-ordination of banking policy under the direction of the Reserve Bank; (iv) to control the volume of credit in circulation and bank interest rates; and (v) to mobilise and to provide machinery for the control of foreign exchange and the gold resources of the Australian economy.

The Commonwealth Banks Act 1959-1968: This Act created the Commonwealth Banking Corporation as the controlling body for the newly-constituted Commonwealth Trading Bank of Australia, Commonwealth Savings Bank of Australia and Commonwealth Development Bank of Australia. The Corporation and its constituent banks are subject to the same banking controls as are

the private trading banks. (The Commonwealth Bank, established in 1911, had performed a number of diverse roles, e.g. as a trading bank, a savings bank and a central bank. The effect of the new legislation was to isolate the individual functions and to constitute a separate establishment for each.)

Transactions of Cheque-Paying Banks

The accompanying table summarises the principal statistics relating to all cheque-paying banks in Tasmania for a five-year period. The following definitions apply:

- (i) Deposits—an item among banks' liabilities. The figure is the average, for the year, of *balances* read at weekly intervals.
- (ii) Loans, Advances and Bills Discounted, etc.—an item among banks' assets. The figure is the average, for the year, of *balances* read at weekly intervals.
- (iii) Debits to Customers' Accounts—mainly the total of all cheques drawn by customers during a given period. The figure is the weekly average of such entries for the year.

Transactions: All Cheque-Paying Banks (Including Commonwealth Trading Bank)

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
Number					
Branches Open (a)	100	101	105	105	107
\$'000					
Weekly Averages—					
Deposits—					
Commonwealth and State Governments	754	1,719	1,953	2,502	1,685
Other—					
Fixed	34,970	39,427	42,096	46,585	51,444
Current—Bearing Interest	5,919	6,977	7,788	8,018	8,094
Not Bearing Interest ..	60,867	63,969	65,975	67,369	70,277
Total	102,507	112,091	117,811	124,473	131,501
Loans, Advances and Bills Discounted (b)	55,214	60,460	69,297	72,394	77,603
Debits to Customers' Accounts (c)	43,105	47,103	51,222	55,728	61,018

(a) At end of year.

(b) Excludes loans to authorised dealers in the short-term money market.

(c) Excludes debits to Australian Government account at Hobart branches. In addition to cheque-paying bank transactions, those of the Rural Credits Department of the Reserve Bank and the Commonwealth Development Bank are included in this item.

Interest Rates and Security Yields

The next table shows the interest rates available on fixed deposits, the interest yield from treasury notes and the yield from government securities:

Interest Rates and Security Yields
(Per Cent Per Annum)

Particulars	Rate	
	June 1970	June 1971
Trading Banks (maximum rate)—		
Fixed Deposits (less than \$50,000)—		
3 months and less than 12 months	4.80	5.00
12 months and less than 18 months	5.00	5.00
18 months to 24 months	5.30	5.30
Over 24 months and less than 3 years .. .. .	..	5.60
3 years and less than 4 years .. .. .	..	6.00
4 years .. .. .	..	6.50
Fixed Deposits (\$50,000 and over)—		
30 days to 24 months	5.50	5.50
Over 24 months and less than 4 years .. .. .	..	6.00
4 years .. .. .	..	6.50
Commonwealth Government Securities Yield—		
Theoretical 2 years	6.40	6.40
Theoretical 10 years	6.52	6.82
Theoretical 20 years	6.60	7.00
Treasury Notes (Interest Yield)—		
A Notes—3 months' maturity	4.59	5.49
B Notes—6 months' maturity	5.10	5.65

Transactions of Savings Banks

The following table summarises the principal statistics relating to savings banks in Tasmania. Deposits are compiled on a basis different from that used in the case of cheque-paying banks. 'Deposits lodged' is the total inflow of deposits during the year, and 'depositors' balances' is a single liability reading taken at the end of the year.

Transactions: All Savings Banks

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
	no.	no.	no.	no.	no.
Branches Open (a)	147	148	151	151	152
Operative Accounts	394,664	413,413	432,112	452,280	465,888
	\$'000	\$'000	\$'000	\$'000	\$'000
Deposits Lodged	153,444	189,026	203,850	217,531	244,416
Interest Added	4,710	5,300	5,857	6,529	7,087
Excess of Deposits over With- drawals	7,955	13,405	4,864	5,687	2,660
Depositors' Balances (a) ..	148,401	167,106	177,827	190,043	199,790
	\$	\$	\$	\$	\$
Per Head of Population— Depositors' Balances (a) ..	400	444	467	490	509

(a) At end of year.

The next table gives details of housing finance transactions by savings banks in Tasmania. Figures for this activity are not available prior to 1969-70.

Savings Banks: Housing Finance Transactions

Period	Loans (a) Approved to Individuals For—					Total All Loans Approved	Loans Cancelled (b)	
	Dwellings not Previously Occupied		Dwellings Previously Occupied		Alterations and Additions			
	Number	Amount	Number	Amount	Amount	Amount	Number	Amount
		\$'000		\$'000	\$'000	\$'000		\$'000
1969-70 ..	444	3,357	865	5,542	289	9,188	78	524
1970-71 ..	578	4,853	1,281	8,989	242	14,085	113	1,151
1970-71—								
July ..	71	572	92	626	31	1,229	3	24
August ..	49	416	87	564	23	1,003	6	50
September ..	43	347	105	712	8	1,067	8	56
October ..	35	269	88	587	15	871	6	45
November ..	52	413	104	695	10	1,119	8	54
December ..	50	446	106	753	8	1,207	13	86
January ..	24	184	75	540	12	736	11	69
February ..	44	327	129	947	41	1,315	17	138
March ..	61	537	134	964	27	1,528	14	463
April ..	51	425	135	959	16	7,400	8	53
May ..	60	544	117	117	28	1,449	11	42
June ..	38	373	109	109	23	1,161	8	71

(a) Includes details of number of loans for dwelling units approved for first mortgage finance only. Second mortgage finance is included under 'Amount'.

(b) Includes amounts cancelled as a result of periodic examination of undrawn commitments.

At 30 June 1970, the balances outstanding on housing loans made by savings banks to individuals and to building societies were \$48,980,000 and \$2,144,000 respectively.

Savings Bank Interest Rates

The next table shows the maximum rates of interest received by depositors or charged to borrowers with home mortgages:

Hobart Saving Bank: Maximum Interest Rates (a)
(Per Cent Per Annum)

Date of Change In Rate	On Savings Accounts (b)	On Home Mortgages	Date of Change In Rate	On Savings Accounts (b)	On Home Mortgages
July 1961 ..	3.75	5.75	April 1965 ..	3.75	5.75
Aug. 1962 ..	..	6.00	June 1966 ..	..	6.00
April 1963 ..	3.25	..	Aug. 1968 ..	4.00	6.25
May 1963 ..	..	5.50	May 1970 ..	4.25	7.00
June 1964 ..	3.50	..	May 1971 ..	5.00	7.00

(a) Operative from first day in month shown.

(b) Interest on fixed deposits is as for cheque-paying banks.

Insurance

Definitions

The data on insurance that follow are divided into life insurance and insurance other than life, i.e. fire, marine and general insurance. No distinction is made between insurance and assurance, the former term being used in all contexts.

Legislation

Section 51 of the Commonwealth Constitution confers the necessary powers on the Commonwealth Parliament to legislate with respect to 'insurance other than State insurance; also State insurance extending beyond the limits of the State concerned'. The principal Commonwealth legislation affecting current insurance business is as follows:

Insurance Act 1932-1966: Insurance businesses are required to lodge a deposit with the Commonwealth Treasurer, interest on the invested deposit being paid to the depositor. Deposits remain as a security against liability to policy holders and are available to satisfy judgments obtained in respect of policies. The following insurance business is exempted from these provisions: staff superannuation schemes; schemes of religious organisations solely for insurance of their property; friendly society, union and association schemes involving superannuation or insurance benefits to employees. Deposits with a State made prior to the legislation could remain with the State and reduce the amount needed for deposit with the Commonwealth. The passing of the *Life Insurance Act 1945-1965* had the effect of adding life insurance business to the list of activities exempted from the provisions of the *Insurance Act 1932-1966*.

Life Insurance Act 1945-1965: Objects are: (i) to replace all State legislation on the subject of life insurance, except that relating to operations of a State insurance office within a specific State, and to provide uniform legislation for the whole of Australia; (ii) to appoint an Insurance Commissioner to exercise active supervision of the activities of life insurance companies, with a view to securing the greatest possible protection of policy holders; and (iii) to set up adequate machinery for dealing with any company that fails to maintain a required minimum standard of solvency.

Life Insurance

Since 1947, returns lodged under the *Life Insurance Act 1945-1965* have been used to compile life insurance statistics. In Tasmania, the Government Insurance Office does not transact life business so the tables that follow refer to the operations of enterprises exclusively in the private sector. The transactions in the next table are concerned with Tasmania as the State of issue of the policies, not necessarily as the State of risk. The following summarises the principal statistics relating to life insurance business carried on in Tasmania:

Life Insurance Transactions (Excluding Annuities)

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
ORDINARY BUSINESS					
New Policies Issued—					
Number	12,336	14,024	14,974	15,597	17,052
Sum Insured \$'000	52,110	62,517	76,251	83,946	93,895
Annual Premiums \$'000	1,201	1,408	1,749	1,927	2,201
Policies Discontinued or Reduced—					
Number	9,588	9,059	9,409	9,584	11,145
Sum Insured \$'000	23,126	23,624	27,722	31,094	38,521
Annual Premiums \$'000	547	587	622	693	918

Life Insurance Transactions (Excluding Annuities)—*continued*

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
INDUSTRIAL BUSINESS (a)					
New Policies Issued—					
Number	3,058	3,418	3,190	3,090	3,536
Sum Insured \$'000	2,801	3,570	3,212	3,524	3,955
Annual Premiums \$'000	110	139	126	133	153
Policies Discontinued or Reduced—					
Number	6,610	5,659	4,662	4,448	4,423
Sum Insured \$'000	2,091	2,063	2,199	2,470	2,688
Annual Premiums \$'000	92	89	92	104	110
SUPERANNUATION BUSINESS					
New Policies Issued—					
Number	2,252	2,857	2,542	2,300	1,848
Sum Insured \$'000	19,734	19,446	28,599	24,714	26,726
Annual Premiums \$'000	613	636	909	727	813
Policies Discontinued or Reduced—					
Number	2,048	2,671	2,371	3,883	2,226
Sum Insured \$'000	9,258	11,188	10,778	14,738	14,496
Annual Premiums \$'000	270	317	332	455	412
TOTAL BUSINESS					
New Policies Issued—					
Number	17,646	20,299	20,706	20,987	22,436
Sum Insured \$'000	74,645	85,533	108,062	112,833	124,576
Annual Premiums \$'000	1,924	2,182	2,784	2,787	3,167
Policies Discontinued or Reduced—					
Number	18,246	17,389	16,442	17,915	17,794
Sum Insured \$'000	34,476	36,875	40,699	48,302	55,705
Annual Premiums \$'000	908	993	1,046	1,253	1,441
NEW LOANS PAID OVER (EXCLUDING ADVANCES OF PREMIUMS)					
On Mortgage of Real Estate \$'000	3,783	2,455	2,732	4,886	4,737
On Companies' Policies \$'000	990	1,132	1,274	1,631	1,764
On Other Securities \$'000	8	408	13	15	33
Total \$'000	4,782	3,995	4,019	6,531	6,534

(a) Industrial business refers, in the main, to policies on which the premiums are collected as regular instalments by agents on commission.

Fire, Marine and General Insurance

Information for insurance, other than life, is compiled from returns provided by insurance companies transacting marine and general insurance business in Tasmania (including the Tasmanian Government Insurance Office). Statistics that follow are for financial years of companies ending within the period shown.

Definitions: The following definitions apply:

- (i) Premiums represent the full amount receivable in respect of policies issued and renewed in the year, less returns, rebates and bonuses paid or credited to policy-holders during the year. They are not adjusted to provide for premiums unearned at the end of the year and consequently the amounts differ from 'earned premium income' appropriate to the year. When business is increasing, as shown in the statistics, premiums receivable are greater than 'earned premium income' appropriate to the year. The converse applies when business is declining.
- (ii) Claims include payments made during year *plus* estimated amount of outstanding claims at end of year *less* estimated amount of outstanding claims at beginning of year.
- (iii) Contributions to fire brigades, commission and agents' charges, and expenses of management are those amounts actually paid during the year.
- (iv) Taxation represents payments made during the year, including income tax, pay-roll tax, licence fees, stamp duty (where paid by the Company), etc. Income tax paid during the year is based on the income of earlier years.

The following table should not be construed as a Profit and Loss Statement; selected revenue and expenditure items only have been used. In cases where the business is underwritten in one State and the risk situated in another, the business is included in the State of issue.

Fire, Marine and General Insurance
(**\$'000**)

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
Premiums (less Returns, Rebates and Bonuses)	14,703	15,879	17,413	19,380	20,813
Interest, Dividends, Rents ..	309	345	385	434	457
Total Revenue	15,011	16,225	17,799	19,814	21,270
Claims (less Amounts Recoverable)	9,153	16,158	16,890	10,865	12,285
Contributions to Fire Brigades ..	250	242	298	(a) 508	521
Commission and Agents' Charges ..	1,617	1,760	1,863	2,063	2,118
Expenses of Management	2,840	3,248	3,497	3,929	4,407
Taxation (b)	623	664	749	588	424
Total	14,484	22,071	23,297	17,953	19,757

(a) Contribution formula changed by law.

(b) Prior to 1968-69, stamp duty on insurance policies was paid by the issuing company. The decrease in taxation paid is due to companies requiring the policy holder to pay stamp duty.

Types of Insurance: The next table shows premiums and claims according to the class of insurance business transacted in 1969-70. ('Premiums' and 'Claims' have been compiled in accordance with the definitions introducing the section.)

Premiums and Claims for Each Type of Insurance, 1969-70
(\$'000)

Class of Business	Premiums	Claims	Class of Business	Premiums	Claims
Fire	3,426	1,577	Public Risk, Third Party	403	162
Householders' Comprehensive	1,936	582	General Property	97	49
Sprinkler Leakage	4	12	Plate Glass	100	65
Loss of Profits	489	397	Boiler	56	12
Fruit Crop	24	31	Livestock	33	16
Marine	867	217	Burglary	267	131
Motor Vehicles	6,102	4,096	Guarantee	33	4
Motor Cycles	34	19	'Pluvius'	15	7
Compulsory Third Party (Road Accidents)	1,872	2,045	Aviation	43	21
Workers' Compensation	3,711	2,314	All Risks	148	75
Personal Accident	798	327	Television	3	2
Contractors' All Risks	42	7	Other (a)	309	117
			Total	20,813	12,285

(a) Includes 'Seamen's Compensation'.

Ratio of Claims to Gross Premiums: The following table shows, as a percentage, the ratio of claims to premiums for the more important classes of business over a five-year period:

Fire, Marine and General Insurance
Ratio of Claims to Premiums (a)
(Per Cent)

Class of Business	1965-66	1966-67 (b)	1967-68 (b)	1968-69 r	1969-70
Fire	36.4	191.9	194.6	30.7	46.0
Householders' Comprehensive	25.3	199.8	99.5	29.4	30.0
Loss of Profits	35.0	188.5	132.9	(c)	81.3
Marine	44.8	44.7	98.9	84.0	25.0
Motor Vehicles (Excluding Motor Cycles)	62.8	68.1	69.3	68.9	67.1
Compulsory Third Party (Road Accidents)	95.0	98.8	102.4	108.8	109.2
Workers' Compensation	59.1	72.9	67.6	57.9	62.4
Personal Accident	45.6	38.0	49.9	50.2	41.0
Public Risk, Third Party	42.4	30.0	33.4	49.4	40.3
Plate Glass	56.1	55.5	61.9	68.2	64.5
Burglary	54.7	53.7	64.3	52.6	49.2
All Classes	62.3	101.5	97.0	56.1	59.0

(a) See beginning of section for definition of claims and premiums.

(b) The fire disaster of 7 February 1967 affected some ratios.

(c) No percentage because of negative claims figure (due to adjustments made to offset over-estimation of claims outstanding in previous years).

Finance Companies

'Finance companies' for the purpose of these statistics are *incorporated companies* engaged *mainly* in providing business and the general public with credit facilities of the following types: hire purchase and other instalment credit for retail sales; wholesale hire purchase; other consumer and commercial loans; and factoring.

Companies engaged in activities additional to financing still come within the scope of these statistics provided that the major portion of their assets consists of financial assets arising from activities of the types listed above,

and/or a major proportion of their income is derived from such assets. Companies are excluded if: (i) the major proportion of their balances outstanding consists of agreements written for the purpose of financing their own sales; or (ii) they are engaged mainly in financing, in any way, the operations of related companies.

Finance companies are not the sole operators providing instalment credit; there are also some *retail businesses* and *non-retail unincorporated businesses* doing the same. Accordingly this *Finance Companies* section is followed by another section devoted to *total* instalment credit statistics.

Definitions

Instalment Credit for Retail Sales: This category covers all types of instalment credit schemes of finance companies which relate primarily to the financing of retail sales of goods. Instalment credit relates to repayment made by regular predetermined instalments and includes hire purchase, time payment, budget account and personal loan schemes. In these statistics the term 'retail sales' relates to sales principally to the final consumer of new and second-hand goods generally used for household and personal purposes (as in the Bureau's Censuses of Retail Establishments) and to the final purchaser for other purposes (e.g. plant and machinery, tractors). The amount financed in this category is classified according to the following types of commodities: (i) *motor vehicles, etc.*: motor cars and motor cycles, commercial vehicles, tractors, caravans, trailers, motor parts and accessories, etc. (new and used compiled separately); (ii) *plant and machinery*: farm machinery and implements, earth-moving equipment, aircraft, industrial plant and machinery, business machinery and equipment (including commercial refrigeration equipment), etc.; and (iii) *household and personal goods*: furniture, furnishings and floor coverings, domestic refrigerators, electrical goods, radios, television sets, musical instruments, bicycles, motor mowers, clothing, etc.

Wholesale Hire Purchases: This category relates mainly to the financing of motor vehicle dealers' stocks held under bailment or floor plan schemes but also includes finance in respect of other trading stock.

Other Consumer and Commercial Loans: This term covers: (i) personal loans other than those in the categories of mortgage loans and instalment credit for retail sales; (ii) mortgage loans; and (iii) commercial loans, i.e. all loans and advances to businesses not included elsewhere in these statistics.

Factoring: This term is used by finance companies in various senses, but in these statistics, relates to loans on the security of 'trade' debts and purchases of 'trade' debts. ('Trade' debts are those owing to businesses for goods or services supplied to other businesses.)

Amount Financed: Amount financed is the actual amount of cash provided. It excludes interest, insurance, hiring and other charges, and initial deposits. For purchases of existing finance agreements and trade debts purchased, it represents the amount of cash paid to the seller.

Balances Outstanding: Balances outstanding are the amounts owing on all finance agreements as shown in the books of the companies at the end of the relevant period. Accounting practice with respect to inclusion in balances outstanding of unmatured charges, interest and insurance, differs between finance companies and between types of finance agreements. Because of this, details of balances outstanding are given separately for those contracts including, and for those excluding, such charges.

Collections and Other Liquidations: Collections are cash collections of capital repayments, hiring charges, interest and insurance. Other liquidations are any reductions in balances outstanding other than by cash collections; they include bad debts written off and rebates for early payments.

Finance Companies: Collections and Other Liquidations and Balances Outstanding by Type of Agreement (\$m)

Year	Contracts including Charges			Contracts excluding Charges				Total all Contracts
	Instalment Credit for Retail Sales	Other Consumer and Commercial Loans	Total	Wholesale Hire Purchase	Other Consumer and Commercial Loans	Factor-ing	Total	
COLLECTIONS AND OTHER LIQUIDATIONS OF BALANCES								
1965-66	..	27.2	1.4	28.7	9.5	0.5	10.0	38.7
1966-67	..	28.6	1.6	30.2	20.8	0.3	21.1	51.3
1967-68	..	30.0	1.5	31.5	23.9	0.1	24.0	55.5
1968-69	..	33.8	1.4	35.2	r 27.6	0.2	r 27.8	r 63.0
1969-70	..	35.1	1.5	36.6	28.9	0.6	29.5	66.2
BALANCES OUTSTANDING AT END OF YEAR								
1965-66	..	33.8	2.3	36.1	2.3	0.3	2.6	38.6
1966-67	..	35.4	2.1	37.5	3.0	0.3	3.2	40.8
1967-68	..	39.9	1.7	41.6	4.3	0.5	4.8	46.4
1968-69	..	41.7	1.5	43.3	r 4.2	0.9	r 5.1	r 48.4
1969-70	..	43.8	1.5	45.3	4.4	2.2	6.6	51.9

Finance Companies: Amount Financed by Type of Agreement (\$m)

Year	Instalment Credit for Retail Sales	Wholesale Hire Purchase	Other Consumer and Commercial Loans			Factoring	Total all Contracts
			Personal	Mortgage	Commercial		
1965-66	21.4	10.4	0.4	0.4	0.7		33.2
1966-67	22.6	21.4	0.4	0.5	0.5		45.4
1967-68	26.1	25.3	0.5	0.1	0.5		52.6
1968-69	27.1	r 27.4	0.8	..	0.8		r 56.0
1969-70	27.9	29.0	0.8	0.4	1.8		60.0

The value of capital goods (business equipment and plant) leased by finance companies is shown in the table below over a five-year period.

Finance Companies: Business Equipment and Plant on Lease (\$m)

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
Initial Capital Cost of Goods Leased during Period	n.a.	2.1	2.6	2.5	3.4
Balances Outstanding (Capital Costs less Depreciation)	1.9	2.9	4.7	5.0	6.0

In the following table the amount financed in respect of instalment credit for retail sales agreements (a single item in previous tables) is further classified by type of commodity.

**Finance Companies: Instalment Credit for Retail Sales,
Amount Financed, Collections and Other Liquidations, and Balances Outstanding
(\$m)**

Year	Amount Financed during Year					Collections and other Liquidations during Year			Balances Outstanding at End of Year
	Motor Vehicles, etc.		Plant and Machinery	Household and Personal Goods	Total	Cash Collections	Other Liquidations	Total	
	New	Used							
1965-66 ..	7.4	9.3	2.1	2.5	21.4	26.0	1.2	27.2	33.8
1966-67 ..	7.9	10.3	2.1	r 2.3	r 22.6	27.7	0.9	28.6	r 35.4
1967-68 ..	9.5	11.4	2.8	r 2.5	r 26.1	r 29.2	0.8	r 30.0	39.9
1968-69 ..	9.4	11.8	3.4	r 2.5	r 27.1	r 32.9	0.9	r 33.8	r 41.7
1969-70 ..	9.3	12.6	3.5	2.6	27.9	34.0	1.1	35.1	43.8

Instalment Credit for Retail Sales in Tasmania

The collection of data on instalment credit transactions began as a series dealing simply with the hire purchase operations of non-retail finance businesses; it was then expanded to cover the hire purchase operations of retail businesses. The final stage was reached when a concept of instalment credit, considerably broader than just hire purchase, was introduced.

In the next table the *instalment credit for retail sales* transactions of finance companies (see previous section) are part of 'All Businesses', but *finance company* and *non-retail finance business* are not synonymous terms (e.g. a non-retail finance business need not necessarily be an incorporated company). The relation between the series in the previous section and this section can be established as follows: balances outstanding at 30 June 1970: (i) to *finance companies* \$43.8m; (ii) to all *non-retail finance businesses* \$47.4m; and (iii) to *all businesses*, including retail businesses, \$54.7m.

The statistics cover operations of all types of instalment credit schemes which relate primarily to the financing of retail sales of goods, whether the credit is advanced by a retail business or by a non-retail finance business. In general, the term 'instalment credit' is defined as relating to schemes in which repayment is made by regular pre-determined instalments. Types of schemes covered include hire purchase, time payment, budget account, and personal loan schemes which relate primarily to financing of retail sales of goods. The term 'retail sales' relates not only to retail sales covered by the Censuses of Retail Establishments, but also includes other sales of goods to final purchasers (e.g. plant and machinery).

Figures for amounts financed *exclude* interest, hiring charges, insurance, etc. Figures for balances outstanding and collections *include* interest, hiring charges, insurance, etc. Details are not available of these charges or of other items (e.g. rebates allowed for early payment, late payment charges, bad debts written off) which affect the reconciliation of the three main instalment credit series: amounts financed, collections and balances outstanding.

Statistics of amount financed are classified by type of goods, defined as follows: (i) *Motor Vehicles, etc.*—motor cars and motor cycles, commercial vehicles, tractors, caravans, trailers, motor parts and accessories, etc.; (ii) *Plant and machinery*—farm machinery and implements, earth-moving equipment, aircraft, industrial plant and machinery, business machinery and equipment, etc.; and (iii) *Household and personal goods*—furniture, furnishings and floor coverings, domestic refrigerators, electrical goods, radios, televisions, musical instruments, bicycles, motor mowers, clothing, etc. The next table shows Tasmanian operations on an annual basis, but monthly and quarterly series are also published.

Instalment Credit for Retail Sales (a)
(Hire Purchase and Other Instalment Credit)
(\$'000)

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
FINANCED BY RETAIL BUSINESSES					
Amount Financed During Period (b)—					
Motor Vehicles, etc. (c) ..	400	422	430	821	912
Plant and Machinery ..	4,807	4,776	4,859	r 5,442	5,698
Household and Personal Goods					
Total All Goods ..	5,207	5,198	5,289	r 6,263	6,610
Balances Outstanding at End of Period (d)	7,645	7,050	6,457	6,825	7,313
FINANCED BY NON-RETAIL FINANCE BUSINESSES					
Amount Financed During Period (b)—					
Motor Vehicles, etc. (c) ..	18,017	19,025	21,909	r 21,960	22,831
Plant and Machinery ..	2,686	2,604	3,117	r 3,917	3,969
Household and Personal Goods	3,633	3,780	4,082	r 4,392	4,144
Total All Goods ..	24,336	25,409	29,108	r 30,269	30,944
Balances Outstanding at End of Period (d)	37,495	38,777	r 43,141	r 45,255	47,423
FINANCED BY ALL BUSINESSES					
Amount Financed During Period (b)—					
Motor Vehicles, etc. (c)—New	8,807	8,718	10,629	10,358	10,548
Used	9,610	10,729	11,710	r 12,423	13,195
Total Vehicles ..	18,417	19,447	22,339	r 22,781	23,743
Plant and Machinery ..	11,126	11,160	12,058	r 13,751	13,811
Household and Personal Goods					
Total All Goods ..	29,543	30,607	34,397	r 36,532	37,554
Balances Outstanding at End of Period (d)	45,140	45,827	r 49,598	r 52,080	54,736

(a) Includes time payment; budget account; and personal loan schemes relating primarily to the financing of retail sales.

(b) Excludes hiring charges, interest and insurance.

(c) Types of goods included are defined under 'Finance Companies'.

(d) Includes hiring charges, interest and insurance.

Friendly Societies

Scope

The details that follow refer to 'Ordinary' Societies, not to 'Special' Societies. Ordinary Societies are those which provide customary sick and funeral benefits and are subject to actuarial valuation. Special Societies restrict their membership to employees of industrial parent organisations and are not subject to actuarial valuation.

Friendly Health Services (F.H.S.): This organisation was originally established to administer medical and hospital benefit funds to which members of existing societies could contribute. Funds, membership and activities of this description are excluded from statistics of ordinary friendly society activities. However, in 1966 F.H.S. commenced sickness assurance activities and by 1969 had assumed an important role in this area of activity. Membership details are included only for 1969 in the following tables but financial tables have been revised back to 1965 to reflect the entry of F.H.S. into the field of ordinary friendly society activity.

Membership

Friendly Societies were a form of social organisation to help members meet the costs of sickness, burial, etc. at a time when government social services were either meagre or non-existent. Membership reached a maximum (over 22,000 in male lodges) in the pre-depression years but has since steadily declined. From the 1950s, there has been rapid development of various government-encouraged insurance schemes to assist families with hospital and other expenses associated with sickness; such schemes have evolved, in general, outside the framework of the Friendly Society movement.

With F.H.S. excluded from consideration, it was observed that: (i) decline in membership of other ordinary societies has continued (from 8,557 members in 1959 to 4,394 in 1969); (ii) the average age of members has continued to increase (from 36.7 years in 1920 to 64.3 years in 1969, 66 per cent of the members being aged more than 60 years).

In the following table male and female members of the F.H.S. Sickness and Assurance Fund and Whole of Life and Endowment Fund have been included.

Friendly Society Membership and Members Receiving Sick Pay, 1969

Particulars	Membership Details					Members Who Received Sick Pay
	Financial Members	Total Membership	Average Age of Members	Admissions	Departures	
	no.	no.	years	no.	no.	no.
All Societies (excluding Friendly Health Services)—						
Male	4,257	4,310	64.3	4	241	721
Female	84	84	63.5	..	2	8
Total	4,341	4,394	64.3	4	243	729
Friendly Health Services ..	541	664	28.4	314	2	66
Total All Societies	4,882	5,058	59.6	318	245	795

In the next table details for F.H.S. are excluded and the figures show the decline in membership of other ordinary societies:

Societies, Lodges and Membership (a)
(Number)

Particulars	1964	1965	1966	1967	1968	1969
Societies	8	8	8	8	8	8
Lodges—Male ..	108	107	107	107	105	105
Female ..	6	6	6	6	6	6
Benefit Members ..	5,778	5,481	5,181	r 4,931	r 4,684	4,394
Financial Members	5,723	5,429	5,128	r 4,827	4,612	4,341

(a) Friendly Health Services excluded.

Revenue and Expenditure

The following table shows the net revenue and expenditure (excluding interfund transfers and transfers between districts and lodges) of Friendly Societies for the financial years of the societies which ended in 1969.

Friendly Societies (a): Net Revenue and Expenditure, 1969
(£)

Revenue			Expenditure		
Particulars	Total	Per Financial Member	Particulars	Total	Per Financial Member
Members' Contributions (b) ..	58,497	11.98	Medical Attendance and Medicine ..	1,956	0.40
Interest, Rent and Dividends ..	80,870	16.56	Sick Pay ..	20,320	4.16
All Other Income ..	16,565	3.39	Funeral Benefits ..	49,802	10.20
			Administration ..	36,987	7.58
			Endowment Benefits	6,728	1.38
			Other	23,218	4.76
Total ..	155,932	31.94	Total ..	139,011	28.47

(a) Includes Friendly Health Services.

(b) Includes levies.

The details in the above table exclude transactions involving Friendly Societies acting as agents for Hospital or Medical Benefits Insurance Schemes.

The next table summarises the main items of receipts and expenditure and accumulated funds for the period 1965 to 1969:

Friendly Societies (Including Friendly Health Services): Receipts, Expenditure and Accumulated Funds
(£'000)

Year	Net Receipts (a)		Net Expenditure (a)				Accumulated Funds
	Contributions and Levies	Total (b)	Sick Pay	Funeral Benefits	Other (c)	Total	
1965 ..	37	132	18	46	61	126	1,379
1966 ..	44	178	19	40	82	141	1,415
1967 ..	52	154	20	45	93	158	1,413
1968 ..	51	154	18	49	126	193	1,373
1969 ..	58	156	20	50	69	139	1,390

(a) Excludes interfund transfers and transfers within societies.

(b) Comprises: (i) income from investments (£81,000 in 1969); and (ii) grants received by Friendly Health Services from the ordinary societies; and other revenue items not specified in the table.

(c) Includes administration and medical attention expenses and endowment benefits paid by societies to members.

The following table shows the growth of the capital of Friendly Societies since 1920, together with the average capital per financial member:

**Friendly Societies: Accumulated Capital
(\$)**

Year (a)	Capital		Year (a)	Capital	
	Total	Per Financial Member		Total	Per Financial Member
1920.. ..	549,194	26.23	1950.. ..	1,231,486	82.41
1930.. ..	819,372	36.62	1960.. ..	1,390,122	182.31
1940.. ..	989,328	50.91	1969 (b)	1,389,949	284.71

(a) At close of the financial years, observed by societies, which ended during calendar year shown.

(b) Includes Friendly Health Services.

Registered Building Societies

Types of Registered Society

There are two distinct types of building society registered under Tasmanian law, namely permanent and terminating (or co-operative).

Permanent Societies: These societies are both savings and deposit-receiving institutions which advance funds for home-building against the security of first mortgages. Those who invest by taking shares or by making deposits are in a separate category from those who borrow to build a home. The following table summarises the transactions of the permanent building societies in Tasmania:

Permanent Building Societies

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
	no.	no.	no.	no.	no.
Operating Societies	4	4	4	6	6
Investing Shareholders	7,570	8,460	8,800	10,600	11,650
Borrowers	4,705	5,000	5,360	r 5,580	5,840
	\$'000	\$'000	\$'000	\$'000	\$'000
Loans—Made	4,323	5,338	r 7,893	r 6,826	10,273
Repaid	2,647	3,032	r 3,439	r 3,960	4,332
Deposits—Received (a)	7,800	8,330	11,651	14,185	22,805
Withdrawn	7,014	7,527	r 9,574	12,913	20,535
Liabilities—					
Paid-Up Capital and Subscriptions	7,722	9,155	10,831	13,226	16,156
Accumulated Profits, Reserves	869	959	784	784	951
Deposits	10,168	11,550	13,627	14,898	17,169
Other	756	359	1,498	944	1,746
Total	19,514	22,024	26,740	29,853	36,022
Assets—					
Loans on Mortgage	18,157	20,463	24,918	27,784	33,724
Other	1,357	1,561	1,822	2,069	2,298
Total	19,514	22,024	26,740	29,853	36,022

(a) Includes interest credited to depositors' accounts.

Terminating Societies: These societies are those which, by their rules, are to terminate at a fixed date or when a result specified in their rules is attained. Societies issue members one class of share and require equated monthly instalments towards share capital from members; when a member borrows to build (and only a member may borrow) he is required to pay additional equated monthly instalments, such addition constituting interest only. The regular instalments in respect of share capital are calculated to amount, with interest, to the nominal amount of the member's shares over the life of the society (say 26 or 30 years). If the member takes out shares with a nominal value of \$6,000, then his borrowing ceiling is set at \$6,000—in other words, the member takes out, in nominal share capital, the amount which he wishes to borrow for home-building. In effect, the member is contributing to a sinking fund for the liquidation of his loan. The terminating societies are termed 'co-operative'.

In the following table relating to co-operative housing (terminating) societies, 'Loans from Government' and 'Loans Due to Government' refer principally to loan money made available under the Commonwealth-State Housing Agreement. Such funds are advanced to the societies through the Agricultural Bank which acts as agent for the Commonwealth Government in this field. The limit of an individual loan was raised from \$8,000 to \$9,000 in August 1969. The next table summarises the transactions of the co-operative housing societies in Tasmania:

Co-operative Housing Societies

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
	no.	no.	no.	no.	no.
Operative Societies	53	63	69	75	87
Shareholders	1,281	1,417	1,634	1,716	1,942
Borrowers	1,059	1,193	1,298	1,397	1,538
	\$'000	\$'000	\$'000	\$'000	\$'000
Loans—Made	1,102	1,000	1,652	1,088	1,735
Repaid	251	271	404	440	454
Loans from Government ..	799	693	1,277	1,014	1,059
Repayments to Government ..	215	277	393	419	497
Liabilities—					
Share Subscriptions	433	525	630	738	852
Reserves	150	198	249	316	378
Loans due to—Government	3,764	4,183	5,067	5,662	6,224
Other Lenders					
(a)	1,984	2,112	2,330	2,224	2,761
Other	58	72	96	107	132
Total	6,390	7,089	8,370	9,048	10,348
Assets—					
Loans on Mortgage	6,201	6,930	8,178	8,827	10,109
Other	189	160	192	221	239
Total	6,390	7,089	8,370	9,048	10,348

(a) Includes bank overdrafts for day-to-day running of societies.

Co-operative Societies

The next table summarises the financial transactions of societies registered under Tasmanian law as co-operative industrial societies; excluded are co-operative credit societies which are dealt with in a subsequent section. The

activities of Co-operative Societies include processing of primary products, fish and meat marketing and wholesaling groceries; profits are distributed among members.

Co-operative Societies

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
	no.	no.	no.	no.	no.
Societies	14	15	16	16	16
Shareholders	4,399	5,252	5,575	5,705	6,374
	\$'000	\$'000	\$'000	\$'000	\$'000
Sales	6,980	9,533	10,142	r 9,967	10,448
Less Cost of Goods	5,885	8,073	8,429	8,411	8,831
Trading Profit	1,096	1,459	1,714	r 1,555	1,617
Add Non-operating Receipts (a)	907	1,066	1,068	1,198	1,306
Less Expenses—					
Wages and Salaries	580	677	783	r 665	788
Interest	104	116	125	129	130
Administration	46	61	53	245	281
Other	1,089	1,373	1,576	1,478	1,498
Net Surplus	184	298	244	234	227
Dividends Paid	44	52	18	51	56

(a) Commissions, discounts, services, etc.

The next table shows the assets and liabilities of the societies:

Co-operative Societies: Assets and Liabilities at End of Year (\$'000)

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
Liabilities—					
Paid-up Capital	1,119	1,190	1,219	1,221	1,223
Accumulated Profits	458	527	496	566	619
Reserve Funds	352	427	521	585	631
Loans and Bank Overdraft	1,927	2,095	2,182	2,082	2,229
Sundry Creditors	925	1,446	1,553	1,647	2,010
Other	136	175	288	242	267
Total Liabilities	4,917	5,860	6,258	6,342	6,980
Assets—					
Fixed	1,541	1,957	2,025	2,019	2,144
Stock on Hand	831	937	996	961	1,235
Sundry Debtors	2,073	2,478	2,736	2,393	2,526
Other	473	487	501	969	1,075
Total Assets	4,917	5,860	6,258	6,342	6,980

Co-operative Credit Societies

Description

The co-operative credit societies (credit unions) are registered under the *Co-operative Industrial Societies Act 1928*. Most credit unions have been established by trade unions (e.g. those serving teachers, hospital employees, etc.) and by church groups. Members contribute capital by taking out shares and making deposits.

Transactions

The following table shows the societies' annual transactions:

Co-operative Credit Societies

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
	no.	no.	no.	no.	no.
Operating Societies	13	16	19	19	23
Shareholders	4,622	5,738	8,696	10,428	13,681
Borrowers	2,790	3,284	r 5,226	r 6,091	8,153
	\$'000	\$'000	\$'000	\$'000	\$'000
Loans—Made	1,068	1,570	2,268	r 2,664	3,638
Repaid	(a) 866	1,054	1,462	1,757	2,188
Deposits—Received (b) ..	994	1,475	2,062	3,430	5,290
Withdrawn	660	974	1,363	2,508	3,979
Liabilities (at End of Period)—					
Paid-Up Capital	40	49	71	89	118
Reserves, Accumulated Profits	20	27	38	69	75
Deposits	1,274	1,775	2,475	3,397	4,709
Other	80	108	135	163	355
Total Liabilities	1,414	1,959	2,719	3,718	5,257
Assets (At End of Period)—					
Loans	1,290	1,805	2,611	3,518	4,968
Cash and Current Deposits ..	68	132	95	89	111
Other	56	23	14	111	178
Total Assets	1,414	1,959	2,719	3,718	5,257

(a) Includes interest payments on loans.

(b) Includes interest credited.

Pensions and Superannuation Schemes*Private Schemes*

Surveys on an Australia-wide basis have revealed superannuation and/or retiring allowance schemes for employees in the private sector as follows: (i) schemes operated through life insurance offices, friendly societies and other organisations such as unit trusts; (ii) superannuation, pension and retiring allowance funds constituted by businesses; and (iii) direct payments of pensions and/or retiring allowances by the employer.

Government, Local Government and Semi-Government Schemes

The levels of government operating in Tasmania are: (i) Commonwealth; (ii) State; (iii) Local; and (iv) Semi-government authority. In the section that follows, any pension or superannuation scheme affecting employees of the Commonwealth Government or its instrumentalities is excluded; the principal fund so excluded is the Commonwealth Superannuation Fund for which State details are not available.

Government superannuation and pension schemes are included as part of 'Private Finance' because the funds involved do not belong to any government but are actually trust moneys held on behalf of contributors. Employees of the State Government contribute to separately constituted funds to which the State Government also makes contributions. Employees of local government and semi-government authorities are covered either by separately constituted funds or by schemes operated through life insurance offices.

The first pension and gratuity scheme for State public servants, introduced in 1860, was non-contributory and short-lived, being repealed in 1863. A contributory provident fund was established under the *Civil Service Act* 1900 but this scheme was also short-lived and made way for a contributory but State-subsidised scheme established under the *Public Service Superannuation Fund Act* 1905; a year earlier, a distinct fund had been established with similar principles to serve the teaching service. The *Superannuation Act* 1938 established a new fund to serve both public servants and teachers but pensions continued to be paid from the two funds established in 1904 and 1905. It was not until 1 July 1968 that the residual assets and pension liabilities of these older funds were transferred to the State Superannuation Fund Board. The assets transferred from the 1904 teachers' fund were \$52,990 and from the 1905 public servants' fund, \$17,103.

State Superannuation Scheme 1971: In December 1970, the *Superannuation Fund Act* 1938 was amended to provide for adjustments to pensions in accordance with movements in the Consumer Price Index. Next, a new scheme was embodied in the *Retirement Benefits Act* 1970 the date of operation being fixed at 1 July 1971. Contributors to the 'old' scheme were given the right of election, i.e. to change to the 'new' scheme or to stay with the 'old'. The main provisions of the new scheme were as follows:

- (i) A new retirement fund was to be established with contributions from Government and employees.
- (ii) Employees transferring from the old scheme to the new were to pay contributions equivalent to 5.5 per cent of annual salary. New entrants to State service were to have a choice and either pay at a 5.5 per cent or 2.75 per cent rate.
- (iii) Pensions payable would depend on three factors: (a) length of service (40 years is necessary to obtain the best pension rate); (b) average annual salary received during last three years of service; and (c) the chosen percentage contribution (i.e. 5.5 per cent or 2.75 per cent).
- (iv) Pensions payable were to be adjusted according to the annual movement in the Consumer Price Index revealed in September quarter figures.
- (v) Persons entering the State service from prescribed superannuation funds were to be able to transfer to the Retirement Benefits Fund without being treated as new entrants (for calculation of length of service).

The adoption of fixed percentage contributions as the basis for the new scheme overcomes the main difficulty with the more traditional type of scheme, namely the prohibitive cost of new units for contributors in the upper-age brackets. The other improvement is the annual provision for automatic adjustment of the pension in accordance with price index movements.

Separately Constituted Funds: In the table that follows, the operations of the following schemes have been combined and summarised: (i) State Superannuation Fund; (ii) State Teachers' Superannuation Fund; (iii) Police Provident Fund; (iv) Metropolitan Transport Trust—Retiring Allowance and Staff Pension Funds; (v) Marine Boards' independent schemes; (vi) University of Tasmania—Staff Superannuation, Invalidity Pension and Supplementary Pension Schemes; (vii) Hobart Corporation Retiring Allowance Funds; and (viii) Milk Board of Tasmania Superannuation Fund.

**State, Local Government and Semi-Government Pension and
Superannuation Schemes Operated Through Separately Constituted Funds**

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
Income—	\$'000	\$'000	\$'000	\$'000	\$'000
Contributions—					
Employees	1,488	1,582	1,763	1,985	2,239
Employing Authorities ..	1,604	1,694	1,959	2,169	2,368
Interest, Dividends and Rent	1,078	1,177	1,307	1,450	1,654
Other Income	21	361	59	75	18
Total	4,193	4,815	5,088	5,679	6,278
Expenditure—					
Pensions	1,946	2,008	2,290	2,530	2,762
Lump Sum Payments—					
On Retirement or Death ..	128	122	194	273	347
On Resignation or Dismissal	394	350	399	445	495
Other Expenditure	19	52	114	25	68
Total	2,487	2,532	2,998	3,273	3,673
Total Assets (a)	20,474	22,736	24,829	27,241	29,903
Funds in Operation	no. 12	no. 13	no. 14	no. 12	no. 12
Contributors (a)	11,533	11,963	12,829	13,329	13,618
Number of Pensioners at End of Year	2,404	2,515	2,638	2,700	2,757

(a) At end of year.

State Superannuation Fund: In the previous table, the principal fund included is the State Superannuation Fund contributed to by all permanent full-time employees of the Public Service, Teaching Service, Transport Commission, Hydro-Electric Commission and all hospitals subsidised by the State Government. (The Teachers' Superannuation Fund is now almost wound up and teachers contribute to the State Superannuation Fund.) The following table gives principal details of the State Superannuation Fund:

State Superannuation Fund (a)

Particulars	1968	1969	1970
Contributors no.	11,490	12,004	12,268
Pensioners—			
Ex-employees no.	1,459	1,518	1,585
Widows and Children no.	1,108	1,147	1,154
Accumulated Funds (b) \$'000	20,717	22,929	25,190

(a) At 30 June.

(b) Total assets less liabilities.

Police Provident Fund: The Police Provident Fund, a *closed fund* included in the earlier table, had accumulated funds of \$2,838,977 at 30 June 1970. An amendment of the *Superannuation Act* 1938 in 1963, provided that police officers appointed after 31 December 1963 were required to become contributors to the State Superannuation Fund. Police officers appointed prior to 1 January 1964 could continue as contributors to the Police Provident Fund or exercise an option to become contributors to the State Superannuation Fund.

Schemes Operated Through Life Insurance Offices: A number of local government and semi-government authorities in Tasmania operate pension and superannuation schemes for their employees through life insurance offices. The next table combines and summarises the operations of such schemes. The following being the main authorities concerned: (i) Semi-government—marine

boards, fire brigades, Metropolitan Transport Trust (Launceston and Burnie), University of Tasmania, ambulances, Society for Blind and Deaf, Museum and Art Gallery, Botanical Gardens; and (ii) Local Government—the cities and municipalities. Some authorities e.g. University, Metropolitan Transport Trust, etc. operate schemes on both bases, i.e. some through separately constituted funds, and others through life insurance offices.

Local and Semi-Government Pension and Superannuation Schemes Operated Through Life Insurance Offices

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
Income—	\$'000	\$'000	\$'000	\$'000	\$'000
Contributions—					
Employees	227	302	353	415	463
Employing Authorities ..	356	449	503	595	663
Surrenders	64	127	91	78	143
Death Claims	23	34	79	34	73
Matured Policies	35	77	63	117	87
Other Income	31	5	15	23	30
Total	736	993	1,104	1,260	1,458
Expenditure—					
Premiums Paid to Insurance Companies	521	750	855	1,010	1,129
Benefits—					
On Death or Retirement ..	76	118	143	155	154
On Resignation or Dismissal	64	114	80	64	123
Other Expenditure	12	9	9	13	19
Total	673	992	1,087	1,242	1,425
Funds in Operation	no. 21	no. 20	no. 20	no. 20	no. 20
Contributors (at End of Period)	1,915	2,098	2,200	2,392	2,374

Miners' Pension Fund

The Fund was established to provide for pensions to miners upon retirement or when incapacitated by injury, etc. and, in certain circumstances, to widows and dependants. Contributions to the Fund are made by the State Government, mine owners and miners. Details are as follows:

Miners' Pension Fund					
Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
Income—	\$'000	\$'000	\$'000	\$'000	\$'000
Contributions—					
Employees	2	2	2	3	2
State Government ..	30	30	30	30	30
Mine Owners	9	8	9	11	12
Interest, Dividends and Rent	14	12	11	10	10
Total	55	53	52	54	54
Expenditure—					
Pensions	71	71	67	69	61
Other Expenditure	5	3	2	3	2
Total	76	74	70	71	63
Assets (at End of Period) ..	243	222	205	187	178
Contributors (at End of Period)	no. 61	no. 52	no. 58	no. 58	no. 54
Pensioners (at End of Period) ..	154	157	155	153	151

Until 1962-63, the State Government contributed an amount to match that of the mine owners, the employers' share being related to coal production. After actuarial investigation, it was decided to strengthen the Fund and an amount of \$30,000 was stipulated in amending legislation as the Government's maximum annual contribution. The maximum has since been paid.

The Parliament Pension and Superannuation Scheme

The Tasmanian Parliament, in common with the parliaments of the other States and the Commonwealth, operates a superannuation scheme for the benefit of members who retire or are defeated after having served a minimum qualifying period. Basic rate pensions for Tasmanian members are payable after fifteen years' service, lesser rate pensions being calculated pro-rata to length of service expressed as a fraction of fifteen years; if the fraction is less than $\frac{8}{15}$ (i.e. service less than eight years) then the member merely receives a refund of his contributions. A member, by increasing his subscription from \$312 per annum to \$624, might contract to receive double the basic rate; provision also existed for subscription scales yielding $1\frac{1}{3}$ and $1\frac{2}{3}$ of the basic rate. (In June 1971, members were paying \$417.48 per annum for the base rate entitlement.)

Prior to 1968, the basic rate pension was the Hobart basic wage (as varied from time to time). In 1968, the *Parliamentary Retiring Allowances Act* was amended to substitute a new formula for calculation of the basic rate. The formula is \$12.50 weekly plus 34.5 per cent of Australian average weekly earnings per employed male unit in each year ended March (as revealed by pay-roll tax returns). The formula, when applied in 1968, gave a close approximation to the basic wage current in State Wages Boards' determinations (\$34.40). In 1970 the formula gave a basic rate of \$39.54 compared with the current State Wages Boards' basic wage determination of \$36.80. The basic rate, revised annually in this way, replaces the basic wage specified in the original Act.

For the ordinary member, the scheme was purely contributory and was not State-subsidised until 1969-70 when the accumulated funds became inadequate (hence the large Government grant in that year); the \$3,000 government contribution shown for previous years was a special payment in respect of a retired member who had held office as premier for not less than 15 years.

Transactions of the fund (Parliamentary Retiring Allowances Trust) are shown in the following table:

State Parliamentary Pension and Superannuation Scheme
(\$'000)

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
Income—					
Members' Contribution (a) ..	35	37	40	39	41
Government Contribution ..	3	3	3	3	34
Interest	4	3	2	2	..
Total	41	43	45	43	75
Expenditure—					
Pension Payments (b) ..	45	48	50	68	86
Other (incl. Refunds) ..	..	4	..	11	1
Total	45	52	50	79	86

State Parliamentary Pension and Superannuation Scheme—continued
(\$'000)

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
Total Assets (at End of Period)	63	54	49	14	4
Less Liabilities	1	1	2	3	3
Accumulated Funds	62	53	48	12	..

(a) Number of contributors throughout period, 54 (House of Assembly, 35; Legislative Council, 19). Contribution for basic rate pension compulsory.

(b) Number of pensioners at 30 June 1970: ex-members, 21; widows of ex-members, 11.

The fund and scheme just described is administered by a trust, consisting of the President of the Legislative Council, the Speaker of the House of Assembly and the Under Treasurer, all *ex officio*; the trust has the power to appoint its own secretary and has chosen for this office the manager of the Treasury's Superannuation Branch.

Chapter 15

TRANSPORT AND COMMUNICATIONS

MARINE BOARDS AND HARBOUR TRUSTS

Introduction

Tasmania has a number of ports capable of accommodating overseas vessels; they are sited on the Derwent and Huon rivers in the south (Hobart and Port Huon); on the Tamar in the north (Beauty Point, Inspection Head and Bell Bay); on the Mersey (Devonport), in Emu Bay (Burnie), and at Port Latta, all in the north-west. All these ports provide depths of approximately 30 feet or more of water at berths; Port Latta provides a depth of 52 feet nearly a mile off-shore.

Interstate and intrastate trade passes through the main ports and is carried on as well through ports at Strahan, Stanley, Ulverstone, Currie (on King Island) and Lady Barron (on Flinders Island). Another interstate and intrastate port at Little Grass Bay, King Island, is scheduled for completion in early 1972.

This section deals primarily with the Marine Boards which control the harbours but a brief description is given of the main ports.

Port of Hobart

Location

The approach to the Derwent and the Port of Hobart is made through a very wide strait between Cape Queen Elizabeth (Bruny Island) and Cape Raoul (Tasman Peninsula), approximately 30 miles south-east from the city. The mouth of the Derwent, three and a half miles wide, lies twelve miles south-east of the port which is built upstream on the western bank in a U-shaped cove; the opposite bank lies one and a half miles away to the east at this point. The shores of the Derwent and the arms of the cove act as natural breakwaters.

Description

The present main port of Hobart is extremely compact, being U-shaped with only 2,000 feet or less separating the two arms. The southern arm is devoted to Princes Wharf with berths numbered one to four; the centre contains Elizabeth Street Pier and Kings Pier while the northern arm is made up of the Macquarie wharves with berths one to four. Most wharves and sheds in the main port are of concrete construction. A tanker berth, formerly sited on Macquarie Point, about 1,000 feet north of Macquarie wharves, has been decommissioned and work has started on the redevelopment of the whole area to provide additional berths.

In the 1960s, a major development was the establishment of special facilities for roll-on roll-off vessels. Princes Wharf No. 1 berth was converted into a specialised terminal with a drive-on ramp and vehicle marshalling area, the *Seaway Queen* and *Seaway King* first berthing there in June and August 1964

respectively. To accommodate the Sydney-Hobart vessel *Empress of Australia*, extensive land reclamation was carried out to the south of Princes Wharf No. 3 berth. The new facility, named No. 4 berth, involved a further wharf, a drive-on ramp, an extensive marshalling area and a terminal building. The *Empress* commenced service in January 1965. Other vessels operated by the Australian Coastal Shipping Commission (Australian National Line) also use this berth.

The most striking feature of the Port of Hobart is the ease with which large vessels can be brought to berth. Tides present no problem, the rise and fall being four feet six inches (average approximately two feet), and dredging of approach channels has never been necessary.

Subsidiary Ports

In addition to the main port in the heart of the city, there are a number of subsidiary outlets serving the south of the State. Near Snug, on D'Entrecasteaux Channel, is the private wharf of the Electrona carbide works. Port Huon wharf, located on the west bank of the Huon River near Geeveston, is in the centre of the principal orcharding area and used mainly for fruit exports. Also based on the Huon River (at Hospital Bay) is the A.P.M. Ltd private wharf (for export of paper pulp). At the port of Spring Bay, near Triabunna on the east coast, accommodation has been provided for bulk carriers loading woodchips for Japan. In the Derwent itself, two and a half miles upstream from the main port, is a tanker berth at Selfs Point where bulk petrol and oil are stored; tankers pass under the 155 feet high navigation span of the Tasman Bridge on their way.

The Selfs Point area is being developed as a petroleum products storage area and has replaced the Macquarie wharf facilities as Hobart's petroleum installation. A mile upstream from Selfs Point is the Electrolytic Zinc Company Ltd private wharf at Risdon. At Boyer, located nearly twenty miles upstream from the main port, is the Australian Newsprint Mills Ltd plant. Newsprint is ferried to the main port by barge.

Administration

The Marine Board of Hobart is the authority controlling the main port of Hobart and Port Huon. When the Marine Board of Strahan ceased to function on 30 September 1970, Parliament extended the responsibilities of the Marine Board of Hobart to cover the control and operation of the Port of Strahan. The Board's jurisdiction covers the west, south and east coasts of Tasmania between the parallel of $41\frac{1}{2}^{\circ}$ South latitude and Cape Portland.

Works Programme

The works programme for 1970 included: (i) construction of berthage facilities at Spring Bay to accommodate bulk carriers engaged in the export of woodchips to Japan; (ii) construction in Hobart of multi-storey office accommodation for the Board; (iii) reconstruction of the Bellerive Ferry Pier; (iv) extension of berthage facilities in Sullivans Cove off Hunter Esplanade at Macquarie Point; and (v) relocation of navigation lights in the D'Entrecasteaux Channel to provide more advantageous facilities for shipping.

The works programme for 1971 included: (i) commencement of reclamation and wharf construction at Macquarie Point to provide additional berthing facilities for roll-on roll-off and conventional vessels. (This development is scheduled for completion during 1973.); (ii) continued construction of multi-storey office accommodation for the Board; (iii) further relocation and improvement of navigation lights in D'Entrecasteaux Channel; (iv) construction

of additional fendering and provision for vehicular access at Selfs Point Wharf; and (v) provision of concrete pad for the roll-on roll-off vessel *Mary Holyman* at Macquarie No. 4 Wharf together with associated storage facilities.

Port of Launceston

Location

The port of Launceston is situated on the River Tamar, which originates at the confluence of the North and South Esk Rivers at the City of Launceston and flows 40 miles to Bass Strait where deep water and broad expanses of river provide a valuable natural harbour. In this area, encompassing Bell Bay, Beauty Point and Long Reach, are located the major activities of the Port of Launceston. A tidal range of between ten and twelve feet creates strong tidal currents, which, by natural scour, eliminate the need for any maintenance dredging in the lower reaches of the river.

Because extensive areas of deep water frontage are available, the development of the port is decentralised with the main operations located as follows:

- (i) *Bell Bay*: wharves include two tanker berths, a general cargo and bulk berth, a passenger berth, roll-on roll-off facilities, a special bulk berth serving Comalco Aluminium Ltd, and two berths under construction to serve the woodchip industry. The roll-on roll-off facilities serve the *Empress of Australia* (from Sydney) and the *Bass Trader* and *Australian Trader* (from Melbourne). The Bell Bay site is on the eastern shore, some eight miles upstream from the mouth of the Tamar.
- (ii) *Inspection Head*: overseas berths on the western bank, opposite Bell Bay, for shipment of fruit, frozen meat and general cargo. Large cool storage and freezer facilities are provided.
- (iii) *Beauty Point*: bulk storage and special loading facilities for tallow as well as general cargo facilities. Location is on the western bank, half a mile upstream from Inspection Head.
- (iv) *Kings Wharf Launceston*: berths for inter and intrastate trade; facilities also include a graving dock and fitting out berths for small ship docking and repair.

Description

All berths and facilities now in service in the port have been constructed since about 1950 and are therefore, of modern standard.

Channel and lighting improvements in the lower reaches, have been carried out over recent years, permitting vessels of up to 50,000 tons deadweight to work the river for ten miles from Bass Strait to the site of the new woodchip berths in Long Reach. The channel improvement works have been designed to provide for the rapidly growing industrial complex at Bell Bay which is creating an ever increasing demand for large bulk carriers.

Administration

The port is administered by the Port of Launceston Authority whose jurisdiction covers the full length of the River Tamar, together with the northern coast-line westward to Badger Head and eastward to Cape Portland.

Works Programme

During 1971, channel improvement works were substantially completed with the removal of Garden Island. Current work is directed towards completion of two woodchip loading berths at Long Reach. Meanwhile, the Port Authority is investigating the feasibility of constructing a large graving dock.

With the current expansion of the Comalco works, the commissioning of the Bell Bay Thermal Station and the establishment of the woodchip industry, the development of the Port of Launceston during the next few years will result in a doubling of cargo tonnage handling capabilities by 1973.

Port of Devonport

Location

The Port of Devonport is situated on the River Mersey within one mile of the coast. The entrance is sheltered by Mersey Bluff on the west and by a training wall extending half a mile northward from the eastern shore of the river. The river was always a natural harbour for small craft and its development as a major port by extensive dredging and engineering works has resulted in a secure harbour for large ships.

Description

The main harbour is formed around two swinging basins each 850 feet in diameter with wharves on both banks providing 3,500 lineal feet of berthage.

The western bank contains four overseas and interstate berths and one specialised cattle jetty. These berths are provided with storage sheds, oil pipelines, wheat silos, bulk cement silos, as well as one of the largest and most modern cold storage facilities in the State. Provision has also been made for the handling of bulk commodities and heavy lifts whilst all berths are connected to the State railway network.

Two terminals for roll-on roll-off and container cargo are located on the eastern bank; one is leased to the Australian National Line and the other is a common-user facility. Both are equipped with stern loading ramps and cranes for lift-on lift-off cargo. Extensive vehicle marshalling and cargo assembly areas are provided with land available for expansion. Over 90,000 passengers pass through the terminal each year from the regular *Princess of Tasmania* and *Australian Trader* services to and from Melbourne. The *Bass Trader* and *Sydney Trader* also maintain regular services, the two eastern berths being equipped to handle these vessels simultaneously.

A 30-ton portal travelling crane at No. 2 Berth is capable of handling all types of cargo units. For the speedy handling of bulk cargoes a 14-ton grab and 40-ton capacity hopper are available as auxiliaries to the crane. This berth is designed to take distributed loads up to 1,200 lb a square foot or I.S.O. 20-ton containers stacked two high.

Works Programme

The port is capable of handling vessels with 28½ feet draft and up to 600 feet in length. A dredging programme to allow accommodation of larger vessels is nearing completion as are also extensions to wharf and cargo marshalling areas.

The Port of Burnie

Location

The ports of Hobart, Launceston and Devonport all lie within the shelter of rivers but the Port of Burnie, on Emu Bay, was built out into the open sea in the lee of Blackmans Point; immediately to the west of the Point is a beach on which breaks the short surf of Bass Strait which can produce very rough seas, the nearest land being the Victorian coast 200 miles to the north.

Description

The shelter necessary for all-weather use of the port is provided by a 1,250-foot breakwater anchored to Blackmans Point, and running out to sea with a south-east orientation. The wharves are thus protected by the Point and by the breakwater from swells coming in from the west or north, the two quarters from which heavy seas are feared. Ocean Wharf is constructed immediately in the lee of the breakwater, the two structures appearing as one, and other berths are provided by piers parallel to the breakwater and lying further south.

Future development of the port could not be undertaken without the provision of further protection, and an island breakwater sited north-east from the end of Ocean Wharf has been constructed. The breakwater, consisting of concrete caissons 1,600 feet long, is orientated south-east and is calculated to give ample protection for up to 2,000 feet of berthage south of existing piers. An interesting feature is the use of the lee of the island breakwater for a tanker berth for both petroleum and sulphuric acid, the fuel being pumped to land along a submarine pipe.

In 1961, special facilities were provided to handle the roll-on roll-off vessel *Bass Trader* and the port is also used by the *Empress of Australia*, the *Australian Trader* and, when necessary, the *Brisbane* and *Sydney Traders*.

When the harbour expansion programme was started in 1960, the total volume of trade passing through Burnie was slightly less than 400,000 tons. The anticipated figure for 1970-71 was 1.14m tons and this is expected to increase to about 1.4m tons in 1971-72.

Much of this increased trade can be attributed to a normal increase in use of the port but two major factors, increases in unitised and containerised cargo handling and in handling of bulk metal concentrates will account for a great deal of the expansion, while acid production at the North-West Acid Pty Ltd plant will also contribute to increased port trade.

Large scale storage and handling facilities for metal concentrates have been provided within the port complex. The major factors which brought about the erection of these facilities were:

- (i) commencement of shipment of copper concentrates from Queenstown; and
- (ii) increased shipments of metal concentrates from Rosebery, Renison and Luina.

The major companies involved provided the facilities in the port area, while the Burnie Marine Board, at its own cost, had the necessary bulk cargo berth constructed as part of the same complex.

Works Programme

Major work undertaken during 1971 was the provision of a new 650 feet long general cargo berth on reclaimed land to the south of Jones Pier. The new berth was scheduled for completion by the end of 1971 with provision of associated facilities in 1972.

Port Latta (Circular Head)

A deep-water offshore terminal capable of accommodating bulk ore carriers of 60,000 to 90,000 tons capacity has been constructed at Port Latta for the export of iron ore pellets to Japan. In 1970-71, 1,964,000 tons of ore were exported from the port.

The loading facility consists of a four-foot wide conveyor belt which carries pellets to two swivel loaders located a mile offshore. Vessels moor in 52 feet of water to take on pellets, the system having a discharge capacity of about 3,000 tons per hour.

The port is specialised and designed primarily for export of iron ore pellets produced at Port Latta from ore mined at Savage River. Some of the raw materials for use by the Port Latta plant are imported through the adjacent port of Stanley. Port Latta is located in an area coming under the jurisdiction of the Circular Head Marine Board.

Constitution of Marine Boards and Harbour Trusts

Introduction

Relatively early in Tasmania's history, it was decided that the control and operation of any port was best put in the hands of citizens who had a local interest in its proper management, and, to this end, port administration was deliberately decentralised; the State Government, by legislation, defined the powers and duties of the new authorities it created but the detailed administration, including financial management, was then very much left to the boards and trusts. This is still the position today, government control relating mainly to the approval of borrowing programmes.

Establishment of Boards

Operation of Tasmania's chief ports ceased to be a direct function of the government of the colony in 1857 when legislation was passed to set up the marine boards of Hobart and Launceston. Each board consisted of five wardens; the mayor and the collector of customs were *ex officio* wardens, the remaining three members being appointed as nominees of the respective Chambers of Commerce. In 1867, the Governor was empowered to create other boards, such bodies to consist of three wardens appointed by the Governor; within a year, boards had been constituted under the titles Mersey, Circular Head and Table Cape.

Boards of Hobart and Launceston

The *Marine Boards Act* 1889 created a special electorate for the Hobart and Launceston boards, the nine wardens for each to be elected by ship-owners, importers and exporters. The respective collectors of customs were required annually to compile rolls of these users of the ports and the number of votes each elector could exercise was proportional to his financial interest; for example, an exporter of goods valued from \$400 to \$3,999 had one vote, \$4,000 to \$9,999 two votes, and over \$10,000, three votes. Importers received similar voting powers in proportion to the wharfrage paid while ship owners votes were proportional to tonnage of their vessels. It was further provided that three wardens should retire annually and the master warden be elected by board members. By an amending Act in 1895, the voting powers of importers were divorced from wharfrage paid and placed on the same basis as those exercised by exporters.

The special electorate just described continues to elect the wardens of the Hobart Marine Board; the scale of values affecting the number of votes to be exercised by importers and exporters also remains unchanged. However, in the case of Launceston Marine Board, the system of the special electorate was abolished in 1902. All Launceston citizens on the rolls for the House of Assembly became eligible to cast single votes, a right extended in 1910 to citizens in the other municipalities bordering the Tamar. In 1916, with the adoption of the Hunter scheme for improvements affecting the whole length of the river, changes were made to increase the number of wardens by representatives from the bordering municipalities. The *Marine Act* 1921 reduced the number of wardens to five, restricted eligibility for standing as warden to citizens of Launceston and changed the voting qualification so that marine board electors had to be those qualified to vote at an election of aldermen for the City of Launceston. More recently, electors in Beaconsfield and George Town have again been given voting rights.

Constitution of Boards

The present system of appointing or electing wardens is summarised as follows:

Election or Appointment of Port Authorities

Authority	Number of Wardens	System of Election or Appointment of Wardens
Hobart Marine Board	9	Special electorate of ship-owners, importers and exporters
Port of Launceston Authority ..	5	Electors of Launceston, Beaconsfield and George Town as for municipal elections
Burnie Marine Board	8	} Municipal electors within proclaimed areas
Devonport Marine Board	11	
Circular Head Marine Board ..	5	
King Island Marine Board	5	
Flinders Island Marine Board ..	3	Municipal electors Government nominees
Smithton Harbour Trust	5	

Navigation and Survey Authority of Tasmania

The authority was constituted in 1963 to implement sections of the *Marine Act* 1921 relating to the safety of life and property at sea. Member marine boards contribute equally to the costs of running the Authority; the income is derived from survey and service fees.

Finances of Marine Boards and Harbour Trusts

The principal sources of revenue of the port authorities are shipping tonnage rates and import and export wharfage rates; other sources are charges for pilotage services and the hiring of equipment. Expenditure is summarised under the heading 'works and services' which includes the provision of ordinary port services (e.g. pilotage, tug assistance, etc.), the maintenance of the port (e.g. dredging, etc.) and the improvement of the port (e.g. new wharfs, new berths, etc.). To raise the additional funds required to finance port improvements, the authorities borrow money subject to State Treasury approval, the Treasury acting on behalf of the Australian Loan Council and implementing its annual agreement as to the approved level of new semi-government authority loans.

The following table shows the revenue and loan account transactions for each authority:

Marine Boards and Harbour Trusts
Receipts and Expenditure: All Funds, 1969-70
(\$'000)

Particulars	Authority									Total
	Hobart	Launceston	Devonport	Burnie	Circular Head	King Island	Strahan	Flinders Island	Smithton	
OPENING BALANCE										
Balance at 1 July 1969	2,422	553	395	1,042	4	37	46	33	3	4,534
REVENUE FUNDS										
Receipts—										
Wharfage Charges	1,000	814	740	875	29	48	34	25	..	3,565
Other Service Charges ..	310	901	304	268	46	5	5	2	1	1,839
Plant Hire ..	370	307	96	203	..	5	..	..	..	982
Govt Grants ..	30	..	..	..	..	..	..	..	..	30
Other (a) ..	160	58	46	373	..	2	..	2	..	642
Total ..	1,870	2,080	1,186	1,719	76	59	39	29	1	7,058
Payments (b)—										
Administration ..	196	215	93	96	9	8	5	1	1	625
Debt Charges—										
Interest ..	141	262	337	614	27	5	8	6	..	1,403
Redemption and Sinking Fund Contributions	216	184	223	237	22	4	10	1	..	897
Works and Services	690	1,106	389	265	14	34	20	36	1	2,554
Other	131	104	66	31	3	3	3	1	..	344
Total ..	1,374	1,871	1,110	1,244	75	54	46	46	3	5,822
LOAN FUND										
Receipts—										
Loan Raisings ..	850	980	850	950	85	..	5	190	..	3,910
Other .. ..	..	..	..	..	..	..	..	20	..	20
Total ..	850	980	850	950	85	..	5	210	..	3,930
Payments (c) ..	498	1,229	598	1,516	71	3	23	203	..	4,140
MOVEMENT IN OTHER FUNDS (d)										
Movement in Other Funds ..	35	49	—176	—93	..	..	..	..	..	—185
CLOSING BALANCE										
Balance at 30 June 1970	3,305	561	547	857	19	40	21	23	1	5,373

(a) Includes interest receipts, sundry licences, fines and discounts received.

(b) Excludes amounts applied from reserves for capital purposes.

(c) Includes amounts applied from reserves for capital purposes.

(d) Net movement in balance sheet items such as debtors, creditors, trust accounts, etc.

The next table summarises the transactions of all Marine Boards and Harbour Trusts:

Marine Boards and Harbour Trusts
Receipts and Expenditure: All Funds—Summary
(\$'000)

Particulars	1965-66 <i>r</i>	1966-67 <i>r</i>	1967-68 <i>r</i>	1968-69 <i>r</i>	1969-70
OPENING BALANCE					
Balance at 1 July	4,277	4,699	5,169	5,999	4,534
REVENUE FUNDS					
Receipts—					
Wharfage Charges	2,673	2,909	3,064	3,193	3,565
Other Service Charges	983	1,243	1,480	1,783	1,839
Plant Hire	769	821	896	966	982
Government Grants	43	55	36	30	30
Other (a)	746	544	418	301	642
Total	5,213	5,572	5,894	6,273	7,058
Payments (b)—					
Administration	419	457	558	553	625
Debt Charges—					
Interest	917	1,018	1,149	1,246	1,403
Redemption and Sinking					
Fund Contributions	572	628	771	780	897
Works and Services	2,331	1,971	2,113	2,350	2,554
Other	183	270	279	308	344
Total	4,422	4,343	4,871	5,236	5,822
LOAN FUND					
Receipts—					
Loan Raisings	2,055	2,310	2,598	2,837	3,910
Other	28	5	1	..	20
Total	2,083	2,315	2,599	2,837	3,930
Payments (c)	2,227	3,110	2,810	5,536	4,140
MOVEMENT IN OTHER FUNDS (d)					
Movement in Other Funds ..	—225	—5	22	197	—185
CLOSING BALANCE					
Balance at 30 June	4,699	5,128	6,004	4,534	5,373

(a) Includes interest receipts, sundry licences, fines and discounts received.

(b) Excludes amounts applied from reserves for capital purposes.

(c) Includes amounts applied from reserves for capital purposes.

(d) Net movement in balance sheet items such as debtors, creditors, trust accounts, etc.

Loan Debt and Borrowing

The loan debt of the Marine Boards and Harbour Trusts has increased substantially in recent years. The following table shows the growth of this debt in total and gives individual details for the four principal authorities:

Marine Boards and Harbour Trusts
Loan Debt of Principal Authorities At End of Year
(\$'000)

Authority	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70
Hobart	2,700	2,527	2,559	2,658	2,760	3,394
Launceston ..	2,783	2,888	2,995	3,341	4,399	5,200
Devonport ..	3,886	4,142	4,734	5,258	5,766	6,404
Burnie	7,473	8,766	9,740	10,443	10,782	11,554
Other	260	295	334	549	669	(a) 912
State Total ..	17,102	18,617	20,361	22,249	24,376	27,464

(a) Comprised Circular Head, \$501,000; King Island, \$83,000; Strahan, \$140,000; Flinders Island, \$189,000. Smithton Harbour Trust had no debt.

The next table shows a summary of annual borrowings and analyses the aggregate debt according to creditor:

Marine Boards and Harbour Trusts
Loan Raisings, Loan Debt and Sinking Funds
(\$'000)

Year	Loan Raisings During Financial Year			Loan Debt at End of Financial Year			Total of Sinking Funds at End of Financial Year (a)
	From State Govt	From Other Sources	Total	To State Govt	To Other Creditors	Total	
1959-60	1,552	1,552	20	8,019	8,039	..
1960-61	1,560	1,560	18	9,280	9,298	..
1961-62	1,930	1,930	16	10,877	10,893	7
1962-63	2,167	2,167	..	12,671	12,671	24
1963-64	2,631	2,631	..	14,737	14,737	53
1964-65	2,842	2,842	..	17,102	17,102	85
1965-66	2,055	2,055	..	18,617	18,617	124
1966-67	2,310	2,310	..	20,361	20,361	182
1967-68	2,598	2,598	..	22,249	22,249	247
1968-69	2,837	2,837	..	24,376	24,376	320
1969-70	3,910	3,910	..	27,464	27,464	399

(a) Sinking funds maintained by boards and trusts for debt redemption purposes.

SHIPPING AT TASMANIAN PORTS

System of Record

The shipping statistics contained in this Section were compiled on a new basis from 1 July 1966 and are not fully comparable with statistics published for previous periods. Prior to this date, shipping statistics were compiled from details assembled and supplied by the Department of Customs and Excise and by State Marine Boards. Since 1966-67, Tasmanian shipping statistics have been compiled from details submitted by shipping companies or their representatives, through the Department of Customs and Excise, for each arrival and each departure of a vessel. Not all vessels which arrived at, and departed from, ports in Tasmania are included in the new series of shipping statistics; the following are now excluded:

- (i) naval vessels;
- (ii) yachts and other craft used for pleasure;
- (iii) foreign fishing vessels that neither load nor discharge cargo;
- (iv) Australian-registered fishing vessels operating from Tasmanian ports;
- (v) geographical, seismic and oceanographic survey vessels;
- (vi) offshore oil drilling rigs and vessels servicing them; and
- (vii) vessels of 200 registered net tons and under.

Movements of Vessels

The inward and outward movements of vessels using Tasmanian ports were classified according to type of voyage and not according to the type of vessel. Each movement of a vessel was allocated to one of the following:

- (i) overseas direct;
- (ii) overseas via other State;
- (iii) interstate direct;
- (iv) overseas via port in Tasmania;
- (v) interstate via port in Tasmania; and
- (vi) intrastate.

The first three classifications (overseas and interstate movements) give an unduplicated total for Tasmania. The inclusion of the other three classifications (intrastate or coastal movements) must be taken into account to reflect the volume of shipping arriving at, or departing from, individual ports in Tasmania.

However, for 1969-70, it was decided that classification by type of voyage was unsatisfactory in two particular categories, namely:

- (ii) overseas via other State; and
- (iii) interstate direct.

While vessels confining their operations to Australian waters could never be associated with category (ii), it was nevertheless possible for vessels engaged in overseas voyages to undertake movements classified under category (iii). For example, a ship bound for the U.K. could be sailing Sydney-Hobart-Melbourne-London. The arrival in Hobart, under the pre-1969-70 classification, could be called 'interstate direct' as would the arrival in Melbourne.

For 1969-70 and following years, the classification has been varied so that categories (ii) and (iii) are based on the type of vessel, not on the type of movement. Thus, in terms of the previous example, the U.K.-bound ship's arrival both in Hobart and Melbourne would be classified 'overseas via other State', and not 'interstate direct'.

Tonnage of Vessels

The tonnage of a vessel may be expressed as: (i) gross tonnage; (ii) net tonnage; and (iii) deadweight tonnage. The concept used in the following tables is *net tonnage* which is expressed in units of 100 cubic feet (i.e. 100 cubic feet equals one ton) and represents the volume of enclosed space which can be utilised for cargo or passengers.

Overseas and Interstate Shipping

The following tables show the number of vessels entering Tasmanian ports and their net tonnage. The details are restricted to entries classified as overseas and interstate movements and exclude coastal movements of vessels.

**Shipping: Overseas and Interstate
Vessels Entered Ports in Tasmania, 1969-70**

Port of Entry	Overseas				Interstate Direct		Total Vessels Entered	
	Direct		Via Other State					
	No.	Net Tons ('000)	No.	Net Tons ('000)	No.	Net Tons ('000)	No.	Net Tons ('000)
Hobart ..	43	182	138	673	390	730	571	1,585
Burnie ..	13	45	142	573	176	462	331	1,080
Currie ..	..	..	..	..	1	2	1	2
Devonport ..	9	28	65	244	324	584	398	856
Lady Barron..	..	..	..	..	22	11	22	11
Launceston ..	16	68	111	422	239	703	366	1,193
Stanley ..	32	674	6	122	20	42	58	838
Strahan ..	..	..	..	..	12	9	12	9
Total ..	113	996	462	2,035	1,184	2,543	1,759	5,574

Definitions

In a later table, figures are given for *total* vessels entered and for total net tonnage associated with each port; the figures in each case are higher than those shown above since they include intrastate movements.

The classification 'overseas' in the above table is now much more meaningful since, from 1969-70, the category 'interstate direct' is not used to describe movements of ships engaged in overseas travel voyaging from one Australian State to another; the category now used is 'overseas via other State'.

**Shipping: Overseas and Interstate, Summary
Vessels Entered Ports in Tasmania**

Year	Overseas				Interstate Direct		Total Vessels Entered	
	Direct		Via Other State					
	No.	Net Tons ('000)	No.	Net Tons ('000)	No.	Net Tons ('000)	No.	Net Tons ('000)
1960-61 ..	60	218	194	856	1,100	1,472	1,354	2,546
1961-62 ..	72	268	238	1,099	1,223	1,675	1,533	3,042
1962-63 ..	83	289	331	1,447	1,200	1,739	1,614	3,474
1963-64 ..	81	275	296	1,353	1,131	1,719	1,508	3,346
1964-65 ..	83	281	238	994	1,151	2,136	1,472	3,412
1965-66 ..	123	331	264	1,092	1,258	2,464	1,645	3,887
1966-67 (a) ..	87	321	160	715	1,437	3,049	1,684	4,085
1967-68 ..	67	252	146	635	1,463	3,215	1,676	4,102
1968-69 ..	81	580	134	672	1,580	3,393	1,795	4,645
1969-70 (a) ..	113	996	462	2,035	1,184	2,543	1,759	5,574

(a) Not fully comparable with previous years; see beginning of this section for explanations.

Comparability

In the above table, breaker bars are inserted to show the break in comparability between 1968-69 and 1969-70. However, there is no break in comparability affecting the columns under 'total vessels entered'. The effect of the definitional change is simply to transfer movements of overseas vessels from 'interstate direct' to the category 'overseas via other State'.

The following table has been compiled to show the country of registration of vessels entering all ports in Tasmania. The number of vessels and net tonnage figures shown in this table cannot be added to arrive at a State total as some vessels may have called at two or more ports within the State during the same voyage and are therefore subject to double, triple, etc., counting.

Country of Registration of Shipping
Vessels Entered Tasmanian Ports: Overseas, Interstate and Intrastate

Country of Registration	Vessels Entered Tasmanian Ports					
	1967-68		1968-69		1969-70	
	Number	Net Tons	Number	Net Tons	Number	Net Tons
Australia	1,522	3,191,492	1,645	3,328,042	1,646	3,736,876
Bahamas .. ..	..	..	1	5,132	..	..
Belgium .. ..	..	..	..	..	5	91,027
Bulgaria .. ..	..	..	1	4,103	2	9,292
Chile	1	3,282	..	..	..	..
Cyprus .. ..	..	..	..	..	4	14,605
Denmark	13	20,749	9	32,118	7	37,679
France	3	3,833	4	1,080	2	6,522
Germany, East ..	1	2,700	2	5,400	..	..
Germany, West ..	6	26,443	15	48,510	11	59,967
Gibraltar	1	3,148	..	..	..	..
Greece	7	38,586	10	97,923	10	123,671
Honduras .. ..	..	..	..	..	2	5,326
Hong Kong	5	19,389	8	24,447	8	17,072
India	14	52,183	18	68,423	19	101,516
Indonesia .. ..	..	..	1	2,785	2	4,356
Israel	4	11,252	5	15,749	11	47,672
Italy .. ..	..	..	2	29,159	3	22,244
Japan	30	137,345	32	368,303	38	532,013
Liberia	8	44,225	18	153,200	27	189,750
Netherlands ..	75	203,200	58	173,536	46	200,045
Netherlands Antilles	..	..	..	..	1	5,652
New Caledonia ..	..	..	..	..	2	798
New Hebrides ..	..	..	1	225	..	..
New Zealand ..	33	62,376	36	63,485	31	55,155
Norway	28	153,562	26	146,092	28	196,319
Pakistan	1	3,082	..	..	..	..
Panama	2	9,212	3	10,920	11	30,302
Papua & New Guinea	2	1,034	..	..	1	518
Philippines ..	1	8,516	1	2,007	1	2,756
Poland	2	6,844	5	17,886	3	10,402
Singapore .. ..	..	..	2	7,262	1	584
Spain .. ..	..	..	2	4,055	..	..
Sweden	41	154,943	33	149,486	41	174,407
United Kingdom ..	183	876,156	166	854,622	192	918,347
United States of America ..	15	74,408	17	81,475	16	77,867
U.S.S.R. .. ..	..	..	1	5,158	2	12,582
Yugoslavia .. ..	..	..	2	7,808	2	7,174

The next table shows the number and net tonnage of vessels which entered individual Tasmanian ports during 1969-70. The names of ports in this table refer to the cities or towns in which the controlling Marine Boards are located. Thus, 'Hobart' includes Port Huon; 'Launceston' includes Bell Bay, Beauty Point and Inspection Head; 'Devonport' includes Ulverstone; 'Stanley' includes Port Latta; 'Currie' includes Naracoopa; and 'Lady Barron' includes Whitemark. A State total of number of vessels entered and their net tonnage cannot be obtained from this table by adding the port totals.

**Shipping: Overseas, Interstate and Intrastate
Vessels Entered Tasmanian Ports, 1969-70**

Port (a) of Entry and Type of Service (b)		Vessels Entered					
		In Cargo		In Ballast		Total	
		No.	Net Tons	No.	Net Tons	No.	Net Tons
Hobart—	Overseas Direct ..	22	83,674	21	98,525	43	182,199
	Overseas via Other State ..	128	624,975	10	48,446	138	673,421
	Overseas via Port in Same State ..	17	86,517	2	9,461	19	95,978
	Interstate Direct ..	338	681,058	52	48,781	390	729,839
	Interstate via Port in Same State ..	5	33,130	..	..	5	33,130
	Intrastate ..	46	48,441	3	3,408	49	51,849
	Total Hobart ..	556	1,557,795	88	208,621	644	1,766,416
Burnie—	Overseas Direct ..	10	35,949	3	8,734	13	44,683
	Overseas via Other State ..	141	570,028	1	3,104	142	573,132
	Overseas via Port in Same State ..	25	112,703	1	3,788	26	116,491
	Interstate Direct ..	156	436,362	20	25,488	176	461,850
	Interstate via Port in Same State ..	73	313,588	..	..	73	313,588
	Intrastate ..	8	33,582	14	18,889	22	52,471
	Total Burnie ..	413	1,502,212	39	60,003	452	1,562,215
Devonport—	Overseas Direct ..	5	19,690	4	7,880	9	27,570
	Overseas via Other State ..	64	244,028	1	257	65	244,285
	Overseas via Port in Same State ..	12	54,669	..	..	12	54,669
	Interstate Direct ..	257	504,333	67	79,427	324	583,760
	Interstate via Port in Same State ..	14	69,638	..	..	14	69,638
	Intrastate ..	23	6,137	3	1,516	26	7,653
	Total Devonport	375	898,495	75	89,080	450	987,575
Launceston—	Overseas Direct ..	10	45,471	6	22,229	16	67,700
	Overseas via Other State ..	108	410,030	3	12,025	111	422,055
	Overseas via Port in Same State ..	25	110,066	..	..	25	110,066
	Interstate Direct ..	223	693,105	16	10,068	239	703,173
	Interstate via Port in Same State ..	48	117,894	..	..	48	117,894
	Intrastate ..	13	13,682	9	5,752	22	19,434
	Total Launceston	427	1,390,248	34	50,074	461	1,440,322
Stanley—	Overseas Direct ..	2	7,559	30	666,521	32	674,080
	Overseas via Other State ..	2	9,914	4	112,177	6	122,091
	Overseas via Port in Same State ..	2	15,097	1	6,568	3	21,665
	Interstate Direct ..	17	38,609	3	3,413	20	42,022
	Interstate via Port in Same State ..	3	18,759	..	..	3	18,759
	Intrastate ..	21	12,877	5	4,975	26	17,852
	Total Stanley ..	47	102,815	43	793,654	90	896,469

**Shipping: Overseas, Interstate and Intrastate
Vessels Entered Tasmanian Ports, 1969-70—continued**

Port (a) of Entry and Type of Service (b)		Vessels Entered					
		In Cargo		In Ballast		Total	
		No.	Net Tons	No.	Net Tons	No.	Net Tons
Strahan—	Interstate Direct ..	7	5,320	5	3,844	12	9,164
	Interstate via Port in Same State ..	1	760	..	..	1	760
	Intrastate ..	..	..	2	1,608	2	1,608
	Total Strahan ..	8	6,080	7	5,452	15	11,532
Currie—	Interstate Direct ..	1	2,369	..	..	1	2,369
	Intrastate ..	1	499	20	4,640	21	5,139
	Total Currie ..	2	2,868	20	4,640	22	7,508
Lady Barron—	Interstate Direct ..	1	499	21	10,479	22	10,978
	Interstate via Port in Same State ..	2	998	..	..	2	998
	Intrastate ..	14	6,986	3	1,497	17	8,483
	Total Lady Barron	17	8,483	24	11,976	41	20,459

(a) See introduction to this table.

(b) Type of Service ('Overseas Direct', etc.) is defined under *Movement of Vessels* at the beginning of this section.

The following table shows, in summary form, the number and net tonnage of vessels which entered Tasmanian ports during the last three years:

**Shipping: Overseas, Interstate and Intrastate
Vessels Entered Tasmanian Ports**

Port (a) of Entry		1967-68		1968-69		1969-70	
		Number	Net Tons	Number	Net Tons	Number	Net Tons
Hobart ..	..	544	1,528,957	566	1,597,712	644	1,766,416
Burnie ..	..	548	1,386,734	550	1,352,450	452	1,562,215
Currie ..	..	1	5,535	4	7,362	22	7,508
Devonport ..	..	424	817,882	471	869,634	450	987,575
Lady Barron ..	..	..	..	12	5,988	41	20,459
Launceston ..	..	391	1,254,164	416	1,323,436	461	1,440,322
Stanley ..	..	32	69,640	61	517,841	90	896,469
Strahan ..	..	58	45,048	44	33,968	15	11,532

(a) See explanation in introduction to previous table.

Cargo Discharged and Shipped

Cargo handled at ports is recorded in terms of units of weight or units of measurement, depending on the basis on which freight is charged. A ton measurement is a unit of 40 cubic feet. As totals derived from conversion to a common weight or alternatively to a common volume would not be accurate, entries in each of the two units are recorded and published separately.

In the next table, details are given of the cargo handled at each port in Tasmania. The classification 'Overseas' and 'Interstate' relate either to the origin or destination of the cargo.

Transport and Communications

Cargo Discharged and Shipped
Individual Tasmanian Ports, 1969-70

Port	Overseas		Interstate		Total	
	Tons Weight	Tons Measurement	Tons Weight	Tons Measurement	Tons Weight	Tons Measurement
DISCHARGED						
Hobart	148,046	13,507	608,887	206,491	756,933	219,998
Burnie	86,842	2,528	212,918	254,139	299,760	256,667
Currie .. ..	..	..	5,202	..	5,202	..
Devonport ..	8,278	20,058	165,150	438,688	173,428	458,746
Lady Barron ..	..	..	647	100	647	100
Launceston ..	52,221	9,023	616,280	195,822	668,501	204,845
Stanley	26,687	..	44,573	..	71,260	..
Strahan .. ..	..	..	2,298	..	2,298	..
Total	322,074	45,116	1,655,955	1,095,240	1,978,029	1,140,356
SHIPPED						
Hobart	267,462	39,679	426,091	126,977	693,553	166,656
Burnie	113,730	17,036	122,987	129,729	236,717	146,765
Currie .. ..	..	..	..	288	..	288
Devonport ..	14,731	12,604	189,237	387,169	203,968	399,773
Lady Barron ..	..	..	784	9,888	784	9,888
Launceston ..	58,483	22,709	157,522	135,461	216,005	158,170
Stanley	2,090,549	..	2,179	11,743	2,092,728	11,743
Strahan .. ..	..	..	21,521	..	21,521	..
Total	2,544,955	92,028	920,321	801,255	3,465,276	893,283

The following table gives a summary of overseas and interstate cargo discharged and shipped at Tasmanian ports:

Cargo Discharged and Shipped, All Tasmanian Ports

Year	Overseas		Interstate		Total	
	Tons Weight	Tons Measurement	Tons Weight	Tons Measurement	Tons Weight	Tons Measurement
DISCHARGED						
1960-61	367,419	26,222	768,627	500,747	1,136,046	526,969
1961-62	252,278	28,850	721,099	511,145	973,377	539,995
1962-63	300,978	45,926	1,051,247	438,537	1,352,225	484,463
1963-64	326,043	43,100	1,033,230	448,997	1,359,273	492,097
1964-65	388,777	72,437	1,015,197	597,335	1,403,974	669,772
1965-66	335,700	34,944	1,097,149	708,874	1,432,849	743,818
1966-67 (a) ..	372,748	40,878	1,483,292	837,703	1,856,040	878,581
1967-68	260,730	41,262	1,582,038	913,020	1,842,768	954,282
1968-69	242,928	46,991	1,724,878	961,377	1,967,806	1,008,368
1969-70	322,074	45,116	1,655,955	1,095,240	1,978,029	1,140,356

Cargo Discharged and Shipped, All Tasmanian Ports—*continued*

Year	Overseas		Interstate		Total	
	Tons Weight	Tons Measurement	Tons Weight	Tons Measurement	Tons Weight	Tons Measurement
SHIPPED						
1960-61	104,709	137,949	382,678	568,776	487,387	706,725
1961-62	163,402	179,845	401,461	466,189	564,863	646,034
1962-63	203,877	141,149	583,379	468,374	787,256	609,523
1963-64	154,499	253,130	629,847	384,150	784,346	637,280
1964-65	195,393	198,461	661,928	517,931	857,321	716,392
1965-66	202,820	216,277	636,957	530,090	839,777	746,367
1966-67 (a) ..	220,169	184,336	619,556	669,670	839,725	854,006
1967-68	272,998	249,324	685,321	755,125	958,319	1,004,449
1968-69	1,592,918	233,122	804,812	806,913	2,397,730	1,040,035
1969-70	2,544,955	92,028	920,321	801,255	3,465,276	893,283

(a) From 1966-67 not comparable with previous years; see beginning of this section for explanation.

Passenger Movements

Statistics of overseas arrivals and departures are compiled from information supplied by the Department of Immigration under the *Migration Act 1958-1966*. The shipping companies supply details for compilation of statistics relating to inter and intrastate passenger movements.

A number of definitions, listed as follows, apply to the various categories of passenger movement by ship:

- (i) overseas passengers are persons travelling to or from overseas destinations who embark or disembark in Tasmania;
- (ii) transit passengers are persons from overseas, passing through Tasmanian ports, who continue on board the same ship to an overseas destination;
- (iii) interstate passengers are persons travelling by sea from other Australian States or round-trip passengers, i.e. passengers travelling interstate and returning either to the same port or to another port in Tasmania; and
- (iv) cruise passengers are persons on overseas journeys which have been classified as cruises by Australian authorities to simplify legal requirements. These journeys begin and end in Australia, do not exceed 30 days and are confined to the South-West Pacific.

The following table shows, for a four-year period, passenger movements at the major Tasmanian ports:

*Transport and Communications***Passenger Movements, Tasmanian Ports**

Port	1966	1967	1968	1969
------	------	------	------	------

INTERSTATE, DISEMBARKING

Hobart	5,076	5,700	5,849	5,094
Launceston	7,363 {	6,901	7,568	9,214
Burnie		1,133	1,444	4,458
Devonport	45,830	43,245	44,506	42,116
Total	58,269	56,979	59,367	60,882

INTERSTATE, EMBARKING

Hobart	4,637	5,144	5,345	5,301
Launceston	7,121 {	1,405	2,053	4,263
Burnie		7,078	6,950	8,170
Devonport	44,514	42,981	44,719	41,263
Total	56,272	56,608	59,067	58,997

INTERSTATE, IN TRANSIT

Hobart	336	702	175	365
Launceston	207 {	730	1,123	1,120
Burnie		1,238	1,709	1,813
Devonport	47	31	33	38
Total	590	2,701	3,040	3,336

OVERSEAS, DISEMBARKING

Hobart	173	269	403	64
Launceston	8 {	4	1	6
Burnie		5	10	..
Devonport	4	..	..	2
Total	185	278	414	72

OVERSEAS, EMBARKING

Hobart	256	269	288	256
Launceston	6 {	4	10	2
Burnie		5	2	4
Devonport	5	..	1	2
Total	267	278	301	264

OVERSEAS, IN TRANSIT (a)

Hobart	1,795	2,125	2,276	1,795
Launceston	79 {	109	78	47
Burnie		65	36	21
Devonport	91	55	58	29
Total	1,965	2,354	2,448	1,892

Passenger Movements, Tasmanian Ports—continued

Port	1966	1967	1968	1969
CRUISE, DISEMBARKING				
Hobart	8	..	76	93
Launceston .. .. .	}	..	..	..
Burnie .. .. .		..	..	..
Devonport .. .. .		..	..	..
Total	8	..	76	93
CRUISE, EMBARKING				
Hobart	54	36	123	101
Launceston .. .. .	}	..	..	..
Burnie .. .. .		..	..	..
Devonport .. .. .		..	..	..
Total	54	36	123	101
CRUISE, IN TRANSIT				
Hobart	2,675	1,206	1,184	1,679
Launceston .. .. .	}	..	..	..
Burnie .. .. .		..	..	..
Devonport .. .. .		..	..	..
Total	2,675	1,206	1,184	1,679

(a) Overseas passengers beginning or ending their journey in Australia.

TRANSPORT COMMISSION

Origin of Commission

The State railways operated at a considerable loss during the period following World War I and this difficulty was accentuated by the increasing use of commercial road transport. The 1938 report of the Commonwealth Grants Commission contained the following comment: 'A large State may conceivably stand the cost of duplicated transport, but it is obvious that Tasmania cannot. We believe that the Tasmanian Government appreciates this position and that it can only be met by initiative and decision'. At the time of this report, railways were controlled by a Minister, motor vehicle registration and licensing of drivers were Police Department functions and public vehicle licensing was administered by a Transport Committee appointed by the Government.

Following an enquiry, Parliament passed the *Transport Act* 1938 establishing a new authority headed by a Commissioner and two Associate Commissioners, the associates now being the General Manager of the Railways and the Administrator of Road Transport. This Act and subsequent amending legislation had the effect of creating an administrative authority unique in Australia because the management and control of all public transport, with minor exceptions, became the responsibility of one central authority. The government omnibus services in Hobart, Launceston and Burnie and the privately-owned Emu Bay Railway are the exceptions.

Functions of the Commission

The functions of the Commission are as follows:

- (i) the control and management of the Government railways;
- (ii) the regulation and licensing of commercial road transport (i.e. of 'public vehicles');
- (iii) the registration and taxation of motor vehicles and the licensing of drivers;
- (iv) the control and operation of the Bruny Island ferry service and the Flinders Island shipping service;
- (v) the administration of regulations under the *Traffic Act* concerning road traffic control;
- (vi) the administration and control of State aerodromes;
- (vii) traffic engineering associated with the control of traffic; and
- (viii) control and operation of an engineering plant (known as the 'tool annexe').

In brief, the Transport Commission emerges as a *business undertaking*, an *administrative body* and a *taxing authority*.

Control of Commission

The Commission, by Section 6 (2) of the Act, is absolutely free from political control except that the Minister for Transport may, under Section 33, appeal to the Governor if dissatisfied with decisions of the Commission. Section 34 allows the Governor, as a form of assistance to industry in certain cases, to direct the Commission to reduce freight charges but, to the extent that such direction causes a revenue loss, the Treasurer is obliged to reimburse the Commission; the formula for reimbursement requires either acceptance of the Commission's original charges as the economic cost of the service or substitution of the Auditor-General's calculation of the economic cost, should the level of the Commission's original charges be considered uneconomic by the Auditor-General.

Commission's Financial Operations

The revenue of the Commission comes from three main sources:

- (i) own business undertakings—railways, shipping services and an engineering plant ('tool annexe');
- (ii) public vehicle licensing fees; and
- (iii) grants from Consolidated Revenue.

The financial transactions of the Commission are summarised in the tables that follow. For simplicity of presentation, the transactions are arranged in two sets of accounts, firstly Trading and Profit and Loss, secondly Taxation, Licensing, etc. It should be noted that the net loss in the trading and profit and loss account for any year becomes a charge on Consolidated Revenue in the following year; also that the proceeds from motor taxation, registration, licensing, etc. are passed to Consolidated Revenue, the Commission being reimbursed the costs of collecting such revenues and the costs and expenses incurred in connection with the control of, and the provision of facilities for, motor traffic. A distinction is drawn, however, between public vehicle fees and public vehicle licensing; the latter charges are taken into the profit and loss account as an offset against net trading loss.

Of the total taxes and charges levied on motorists and paid into the Consolidated Revenue Fund, only the motor tax and public vehicle fees components (\$4,827,000 in 1969-70) are transferred by the Treasurer to the State Highways Trust Fund. A part of motor vehicle registration fees, licences, etc. is retained in Consolidated Revenue.

Transport Commission: Trading and Profit and Loss Account
(\$'000)

Particulars	1967-68	1968-69	1969-70
REVENUE			
Railways	6,852	7,214	7,245
Road Transport Services	398	248	(a) ..
Marine Services	186	258	385
Tool Annexe	259	296	328
Land Tax	2,271	2,352	(b) ..
Public Vehicle Licensing (by Transfer)	79	77	80
Other Revenue	111	92	101
Net Loss (c)	1,224	1,185	3,502
Total	11,379	11,722	11,642
EXPENDITURE (d)			
Railways	8,980	9,300	9,326
Road Transport Services	400	252	(a) ..
Marine Services	229	318	374
Tool Annexe	241	273	307
General, including Administration	341	348	385
Interest	1,188	1,231	1,250
Total	11,379	11,722	11,642

(a) Operations ceased 7 December 1968.

(b) In 1969-70, the Treasurer ceased the procedure of transferring Land Tax from the Consolidated Revenue Fund to the Transport Commission.

(c) To be charged against Consolidated Revenue in following year.

(d) Provisions for depreciation included in each item (excluding interest).

In 1969-70, an additional advance of \$2.6m was made from the Loan Fund to the Transport Commission for working capital purposes. This advance was repayable and was brought to account in the Commission's balance sheet.

The remaining transactions can be summarised as follows (road safety accounts are excluded):

Transport Commission: Motor Taxation Collection, Licensing, etc.
(\$'000)

Particulars	1967-68	1968-69	1969-70
REVENUE			
Motor Tax	4,004	4,247	4,456
Public Vehicles Licensing, Fees, etc.	403	410	443
Registrations, Licences, etc.	1,080	1,150	1,262
Refunds of Stamp Duty .. .. .	..	-1	..
Stamp Duty on Vehicle Registrations	217	r 343	365
Transfers from Consolidated Revenue—			
Road Transport Administration	430	464	599
Traffic Engineering Section	249	268	295
Minister for Transport .. .. .	..	..	15
Total	6,382	6,882	7,435

Transport Commission: Motor Taxation Collection, Licensing, etc.—continued
(\$'000)

Particulars	1967-68	1968-69	1969-70
EXPENDITURE			
Profit and Loss Account (Transfer) (a)	79	77	80
Paid to Consolidated Revenue (b)	5,660	6,107	6,480
Administration, Traffic Control, etc.	661	r 702	903
Total	6,401	r 6,886	7,463

(a) Receipts from public vehicle licensing paid into profit and loss account.

(b) Motor Tax and Public Vehicles Fees transferred from Consolidated Revenue to State Highways Trust Fund.

Annual Loss

Up to 1968-69 State Land Tax was paid into the Consolidated Revenue Fund and then transferred to the Transport Commission. In 1968-69 and earlier years the Commission received two grants: (i) reimbursement of the previous year's loss; and (ii) a grant equal to State Land Tax collections. The actual burden on Consolidated Revenue on this basis, for 1968-69, was \$3,575,502. In 1969-70 the Commission was only reimbursed for the 1968-69 loss (\$1,184,895) from the Consolidated Revenue Fund and an extra repayable advance of \$2.6m was made from the Loan Fund to the Commission to replace the Land Tax grant. The accounts reveal that the Commission's net loss occurs principally in respect of railways but the case for continued subsidisation is argued on a number of grounds:

- (i) abandonment of all railway operations would still leave the State with liability for annual debt charges exceeding \$1m;
- (ii) heavy bulk freights now carried by rail would rapidly break up present road surfaces if they were transferred to road haulage; considerable sums would have to be spent in increased road maintenance or road improvements;
- (iii) for certain types of freight, rail transport is still considered more economical than road haulage; closing the railways might add appreciably to the costs of many primary and secondary producers.

Public Vehicle Licensing

The following types of licence are issued by the Commission to operators of public vehicles:

- Aircraft:* for aircraft used as public vehicles on intrastate journeys.
- Coach:* for vehicles used for the carriage of passengers and goods between places along a specified route.
- Omnibus:* for vehicles seating more than eight passengers and operating within a specified area.
- Cab:* for vehicles seating eight or less passengers and operating within a specified area (i.e. plying or standing for hire).
- Hire-Car:* for vehicles seating eight or less passengers and operating between any places in the State; also for the same vehicles standing or plying for hire within a specified area.
- Carrier:* for vehicles engaged in carriage of goods between places on a specified route.

- Cart:* for vehicles engaged in the carriage of goods within a specified area. (Despite the word 'cart', the licence applies to motor driven vehicles.)
- Ancillary:* for vehicles engaged in the carriage of goods in the course of the trade or business of the owner (excluding farmers, general 'carters' and 'carriers'). Such licences apply to operation within a specified area.

Licences are issued for three-year periods for all public vehicles except those classed as ancillary or hire-car, in which case annual renewal is required. The decision of the Commission to grant or refuse a licence, or to impose conditions or restrictions on a licence, is subject to appeal to the Public Vehicle Licensing Appeal Tribunal. The factors considered by the Commission in issuing a licence include:

(i) suitability of the routes over which the applicant proposes to provide the service; (ii) the extent to which the needs of the proposed routes, traffic areas, or districts, are already served; (iii) the extent to which the proposed service is necessary or desirable in the public interest; (iv) the traffic needs of the district or traffic area, including provision of adequate and efficient services, the elimination of unnecessary and unremunerative services, and the co-ordination with rail of all forms of transport; (v) the condition of the roads over which the proposed service is to be provided; and (vi) the fitness of the applicant to hold a licence.

Public Vehicle Control

For the purposes of transport control, Tasmania is divided into eight traffic areas so designed that competitive operations of vehicles licensed for one area are confined to short hauls. From the earlier section on licensing, the following classification emerges:

- (i) licensed only for one traffic area: cabs, omnibuses, 'carts' and ancillary vehicles;
- (ii) licensed for specified routes: coaches and carriers; and
- (iii) licensed for whole State: hire-cars.

Vehicles licensed for a specific traffic area cannot be used outside it without first obtaining a permit which is subject to an out-of-area fee as determined by the Commission. The *Traffic Act 1925* provides for maximum permit fees, in relation to goods vehicles, of 0.4c per cwt of unladen weight for each mile over which the goods are carried. However, the maximum charge determined by the Commission is 0.3333c per cwt. Thus, for a vehicle of an unladen weight of three tons engaged on an out-of-area journey of 120 miles, the permit fee would be \$24 (i.e. 0.3333c x 60 x 120). If goods are carried on the return journey, a further permit fee is payable. In the example quoted, the permit fee at 20 cents per mile virtually doubles the cost of operating the vehicle; it is sufficiently high to prevent most licence holders from travelling outside their area in competition with the railways or with licensed carrier services.

Rebates

In actual fact, it is not always necessary for operators to pay full permit fees as described in the previous paragraph since percentage rebates on full fees may be claimed. Such rebates have relation to the suitability of the goods for transport by rail or licensed carrier and are greatest for certain perishable goods; in general, the shorter the journey, the greater the rebate percentage.

Nominal Fees

Commission policy is to avoid unnecessary duplication of transport, and full fees are charged if the goods in question can be handled as conveniently and efficiently by rail or by an existing licensed carrier service. The Commission grants permits at nominal fees of \$1.00 per trip up to 50 miles and \$2.00 per trip over 50 miles if it is satisfied that road transport is more suitable for any of the following reasons: (i) the dimensions of the load are outside railway clearance; (ii) the perishable nature of the goods makes them unsuitable for rail transport; (iii) time element; (iv) shortage of rail waggons; (v) unreasonably high cost of rail transport compared with road transport, because of extra handling or other reasons; and (vi) special circumstances.

It is estimated that less than a third of out-of-area trips are at full fees, the balance being for nominal fees or at rebates of from 30 to 80 per cent of the full fee.

Ancillary Vehicles

In particular circumstances and where small vehicles frequently travel beyond their licensed areas, an annual fee determined in accordance with the degree of competition with rail and licensed carrier services is charged. In all other cases, vehicles licensed as 'ancillary' are required to obtain out-of-area permits for each loaded journey undertaken beyond the limits of the licensed area.

Passenger Vehicles

Commercial passenger vehicles operating out-of-area may be competing with existing rail or licensed coach services, in which case they can be charged fees at a maximum of 0.5c per passenger seat per mile. If no such competition exists, out-of-area fees are charged at \$0.50 for each 25 miles; in the case of round trips, the mileage is halved in applying the charge formula.

Percentage Fees—Coaches and Carriers

Coaches and carriers receiving licences to operate over routes which extend beyond one traffic area are required to pay a fixed annual fee, or a percentage tax on annual revenue, the extent of the tax being proportional to the assessed competition with rail services.

Transport Commission Shipping Services

The Transport Commission exercises control over: (i) the Bruny Island ferry; and (ii) shipping services between Flinders Island, Hobart, Launceston and Victorian ports.

During 1967-68 a Government appointed committee recommended the replacement of the *Sumatra* with a larger, more economic vessel. The newly constructed *Birthe Andreasen* renamed *Joseph Banks* was purchased and extensively converted to suit the requirements of the intrastate trade. The vessel commenced operating in January 1969 on the inter-island run and between Tasmanian and Victorian ports.

The new ship is better able to handle livestock and has a carrying capacity of either approximately 5,000 sheep or 800 head of cattle. During 1969-70, the *Joseph Banks* logged about 60,000 miles and made 204 port calls.

RAILWAYS

Historical

Tasmania has a three foot six inch gauge government railway system based on a route mileage of a little under 500 miles. A private railway of 83 miles is operated by the Emu Bay Railway Company Ltd between Burnie and Melba Siding (twelve miles south of Rosebery).

The first railway in Tasmania was opened for traffic in 1871 (construction having begun three years earlier on a 45-mile line from Deloraine to Launceston). It is significant that only one-ninth of the original capital was subscribed by the shareholders of the Launceston and Western Railway Company, the remainder, \$800,000, being raised by the Government. The line was laid in broad gauge (five foot three inch) without regard for the fact that narrower gauge might be needed in the more mountainous parts of the island. Within a year of opening, the company was in financial difficulties and the line was taken over by the Government. At the date of starting construction, the island's population had not passed 100,000.

The second line was an even more ambitious undertaking—123 miles of three foot six inch track from Hobart to Western Junction, linking there with the five foot three inch line—and involved considerable problems of contour survey because of the high plateau lying across the route. The Tasmanian Main Line Railway Company opened the line for traffic in 1876. The problem of differing gauges on the two systems was overcome by laying a third rail on the ten miles of the five foot three inch track from Western Junction to Launceston, the Main Line Company having running rights over this stretch. In 1890, the Government purchased the line for \$2,213,000.

The next line to open for traffic (1884) was owned by the Emu Bay and Mount Bischoff Railway Company which converted an existing horse-tramway to three foot six inch gauge; the 48-mile line connected Waratah to the port of Burnie, the primary objective being to ship out freight from the rich Mount Bischoff tin mines.

By 1890, the essential framework of the present railway system on three foot six inch gauge had been laid, and future growth involved track extensions mainly in directions already determined in the first twenty years of rapid construction. The following table shows the pattern of development in 1890 and compares it with that of the present system. Under 'route' is shown firstly the terminals of individual tracks in 1890 and secondly the present extent of the same tracks. Only construction dates before 1890 have been quoted since later extension of track was carried out in several stages.

Government and Private Railways
Route Mileage of Lines Open: 1890 and 1971

Route	Area Served	Year Open For Traffic	Mileage of Lines Open	
			1 Jan. 1890	30 June 1971
Launceston to Devonport ..	North West	1885	(a) 82	..
Launceston to Smithton ..	" "	..	..	(a) 178
Hobart to Western Junction ..	North-South link	1876	(b) 122	(a) 123
Burnie to Waratah ..	West Coast	1884	(b) 48	..
Burnie to Melba Siding ..	" "	..	..	(b) 83
Conara to St Marys ..	Fingal Valley	1886	(a) 47	(a) 47

Government and Private Railways
Route Mileage of Lines Open: 1890 and 1971—continued

Route	Area Served	Year Open For Traffic	Mileage of Lines Open	
			1 Jan. 1890	30 June 1971
Bridgewater to Glenora ..	Derwent Valley	1888	(a) 24	..
Bridgewater to Florentine ..	" "	..	..	(a) 44
Launceston to Scottsdale ..	North East	1889	(a) 47	..
Launceston to Herrick ..	" "	..	..	(a) 85
Other Branches .. ..	..	..	(a) 4	(a) 23
Total Route Miles Open ..	..	..	374	583
Government .. ..	..	..	203	500
Private .. ..	..	..	171	83

(a) Government.

(b) Private

The table does not show two defunct lines which used to operate on the west coast; these were: the government service, Zeehan to Strahan (29 miles), opened in 1892; and the private service, Queenstown to Strahan (21 miles), opened in 1899. The Emu Bay railway was extended to Zeehan by 1900 when it became possible to make a Burnie-Queenstown trip by using all three services and moving Burnie-Zeehan-Strahan-Queenstown.

In 1965, the Emu Bay Railway Company Ltd closed the line from Rosebery to Zeehan; twelve miles of this line, from Rosebery to Melba Siding, was re-opened in January 1970 to enable the transportation of iron pyrites to the North-West Acid Pty Ltd plant at Burnie.

Work commenced in 1972 on the construction of a new rail link from Cold Water Creek to the Port of Bell Bay a distance of some 23 miles.

Growth and Decline

The main task of developing and maintaining railways fell to the Tasmanian Government after it purchased the Hobart-Western Junction line in October 1890. The next table shows the mileage of Government-owned railways from 1895 to the present.

The peak of development was reached in 1930 when 679 miles were open for traffic; since then, many branch lines have been closed down, the competition of road transport making their operation uneconomic. Route mileage has actually declined to what it was over fifty years ago at the outbreak of World War I. Examples of lines now closed down are: Brighton to Apsley, 27 miles; Bellerive to Sorell, fifteen miles; and Zeehan to Strahan, 29 miles.

Government Railways: Route Mileage of Lines Open at 30 June

Year	Route Miles Open	Year	Route Miles Open	Year	Route Miles Open
1895 (a) ..	420	1925 ..	673	1950 ..	613
1905 ..	463	1930 ..	679	1955 ..	605
1910 ..	470	1935 ..	645	1960 ..	538
1915 ..	533	1940 ..	644	1965 ..	500
1920 ..	629	1945 ..	642	1970 ..	500

(a) At 31 December 1895.

Recent Developments

The long-term problem of the State railway system has been to reduce its annual operational loss. In August 1968, the Transport Commission appointed a Committee of Review to undertake a comprehensive study of the railway system with the purpose of improving the financial situation. Since the presentation of the Committee's report in January 1969, the Commission has begun to carry out progressively the Committee's recommendations. Various organisational changes have been instituted, including the establishment of a research and development section, the reconstitution of a commercial section and the amalgamation of some administrative functions.

Introduction of Diesel Locomotives

The elimination of steam locomotives from the system has been almost completed; fourteen such locomotives have been placed in storage and the eight remaining in service are only used for shunting and stand-by purposes. In 1969-70, steam locomotive engine miles were only 0.31 per cent of total engine miles. Three types of diesel are in operation: mechanical, hydraulic and electric but the bulk of running falls on the diesel electric locomotives. At 30 June 1970, the system had the following locomotives in service: steam, eight; diesel mechanical, eighteen; diesel hydraulic, two; diesel electric, 37; total 65. In addition, services were maintained using fourteen self-contained railcars.

Reduction in Passenger Services

The peak of the system's effectiveness in carrying passengers was reached in 1945-46 when 3.4 million passenger journeys were made. Of recent years, a deliberate policy of eliminating uneconomic services has been pursued and passenger journeys in 1969-70 had fallen to 0.91 million.

Bell Bay Rail Link

Late in 1971 work started on the Bell Bay rail link project, the total cost of which, together with associated works, is estimated at \$10m.

The project involves: (i) the construction of a new section of railway on the eastern bank of the Tamar River from Nelsons Creek to Bell Bay; (ii) up-grading of existing track between Nelsons Creek and Launceston; purchase of additional heavy-duty main-line locomotives and bogie wagons; (iii) construction of new running lines and loops in Launceston; and (iv) a new bridge across the North Esk River. The new locomotives will be capable of hauling a trailing load of about 1,200 tons on a gradient of 1:70. The new bogie wagons will have a maximum gross tonnage of 58 tons.

Although various proposals to construct the link have been made, some dating as far back as 1912, it was not until two woodchip exporting companies announced proposals to construct shipping berths at Long Reach, near Bell Bay, that the link was considered economically feasible.

Finance for the Bell Bay project will be provided by the Commonwealth and State Governments. The Commonwealth will provide finance to a maximum limit of \$5m. Of this about 30 per cent will be provided as a grant and the balance as an interest-bearing loan repayable bi-annually over 30 years.

In October 1971 the State Government let a contract worth \$4,048,747 for preliminary construction work. The contract was awarded to a Sydney-based U.S. company, Burgess Mining and Constructions Pty Ltd and G. B. White Pty Ltd of N.S.W. This contract does not include the cost of laying

track, which will be let on sub-contract. The contract involves construction of the railway formation from the branching point on the North-Eastern railway, in the vicinity of Cold Water Creek, to the Bell Bay wharf, and includes a spur line and sidings to serve the two woodchip plants at Long Reach. Also included are fencing of the railway formation and several rail-over-road bridges. The contract requires that the line to Long Reach be completed by 16 August 1972 and the line to Bell Bay wharf by mid-October 1972.

Freight Developments

Modernisation of the railways has affected the carriage of freight generally; in the last 25 years, the following changes have been achieved: (i) density of traffic per mile of line worked (measured as net ton-miles) increased nearly fourfold; (ii) train loads increased by 300 per cent; (iii) average length of haul doubled; and (iv) development of containerisation and bulk transport facilities.

For many years, the size of any commodity carried by rail was limited by a structural clearance of 12 ft 6 in high \times 10 ft 6 in wide. These clearances have recently been increased to cater for goods up to 15 ft high \times 13 ft 6 in wide; further increases to 16 ft high \times 14 ft wide are planned for the near future.

Due to an increased demand for transport facilities for new motor vehicles, the railway workshops have designed and constructed two-deck car-carrying wagons over 70 ft long and each capable of carrying eight motor cars; the upper decks are provided with hydraulically operated ramps. The units are the largest single structure wagons ever built in the Launceston railway workshops.

Ten Scandia-type containers have also recently been built, each has a capacity of 20 tons and is equipped with removable sides to facilitate loading. Other rolling stock improvements include the design and manufacture of a multi-purpose open wagon to carry bulk commodities, containers and general freight. The wagon is almost 50 ft long with a maximum capacity of 44 tons.

The Transport Commission has successfully developed a rail-road service designed to deliver heavy machinery and other construction equipment to the Hydro-Electric Commission's Gordon River power development scheme. The task involves rail haulage to Maydena and road haulage from Maydena to the Gordon River project site by members of the Tasmanian Road Transport Association, under contract to the Transport Commission. To meet the special requirements of the Gordon Project new types of containers have been designed for the carriage of gas cylinders and bulk cement.

Construction Work

Two major civil engineering construction works have recently been completed; the Cam River railway bridge at Somerset has been replaced using seven 60-foot long spans of pre-stressed concrete and a new station yard and building complex was completed at Burnie.

Operating Statistics

The next table shows the principal operating statistics for the Tasmanian system:

**Tasmanian Government Railways
Operating Statistics**

Year	Route-Mileage Open (a) (Miles)	Revenue Train-Mileage (^{'000} Miles)	Passenger- Journeys (^{'000})	Goods and Livestock Carried (^{'000} Tons)
1964-65 ..	500	1,272	1,340	1,091
1965-66 ..	500	1,283	1,304	1,072
1966-67 ..	500	1,274	1,197	1,079
1967-68 ..	500	1,247	1,087	1,162
1968-69 ..	500	1,197	1,045	1,242
1969-70 ..	500	1,180	907	1,258

(a) At end of period.

Financial Operations

The following table gives details of gross earnings and working expenses:

**Tasmanian Government Railways
Financial Operations**

Year	Gross Earnings		Working Expenses (a)		Net Earnings (b)	
	Total	Per Revenue Train Mile	Total	Per Revenue Train Mile	Total	Per Revenue Train Mile
	\$'000	\$	\$'000	\$	\$'000	\$
1964-65	5,581	4.39	7,233	5.68	-1,652	-1.30
1965-66	5,985	4.66	7,563	5.89	-1,578	-1.23
1966-67	6,588	5.17	8,325	6.53	-1,737	-1.36
1967-68	6,587	5.28	8,751	7.02	-2,164	-1.74
1968-69	6,947	5.80	9,089	7.59	-2,142	-1.79
1969-70	6,950	5.89	9,031	7.65	-2,081	-1.76

(a) Includes provision for depreciation but excludes interest.

(b) Excess of gross earnings over working expenses.

Employment and Wages

In the table that follows, details are given of the number of employees, and of wages and salaries paid:

**Tasmanian Government Railways
Number of Employees and Wages and Salaries Paid**

Year	Average Number of Employees (a)		Salaries and Wages Paid (^{'000})	Year	Average Number of Employees (a)		Salaries and Wages Paid (^{'000})
	Salaried	On Wages			Salaried	On Wages	
1962-63	357	1,891	4,868	1966-67	386	1,854	6,107
1963-64	366	1,895	5,220	1967-68	417	2,007	6,425
1964-65	377	1,837	5,355	1968-69	399	1,949	6,700
1965-66	379	1,781	5,651	1969-70	419	1,783	7,024

(a) Excludes construction staff.

Comparison with Other Australian Systems

The Tasmanian system of government railways is the smallest in Australia and the following table, showing principal operational details, allows a comparison to be made:

Australia: Government Railway Systems, 1969-70
Operating Statistics

System	Route Mileage Open (Miles)	Revenue Train Mileage (⁰ 000 Miles)	Passenger Journeys (a) (b) (⁰ 000)	Revenue Goods and Livestock Carried (a) (⁰ 000 Tons)	Revenue Net Ton- Miles (Millions)
N.S.W.	6,061	39,128	251,578	33,442	5,384.3
Victoria	4,166	20,543	144,309	11,835	2,037.2
Queensland . . .	5,813	18,263	28,515	14,439	3,110.2
S.A.	2,444	6,192	13,990	5,888	947.6
W.A.	3,828	7,848	10,580	10,665	1,749.1
Tasmania	500	1,180	907	1,258	119.5
Commonwealth . .	2,248	3,963	(c) 244	(d) 4,824	1,312.5
Total Australia . .	25,060	97,119	450,122	82,351	14,660.5

(a) Interstate traffic is included in the total for each system over which it passes.

(b) Based on ticket sales making allowances for periodical tickets. Tickets sold at concession rates are counted as full journeys.

(c) Passenger journeys continuing over both the Trans-Australian and Central Australian Railway systems are counted twice. In 1969-70 these numbered 7,024.

(d) Tonnages carried over both the Trans-Australian and Central Australian Railway systems are counted twice. In 1969-70, 219,665 tons were counted twice.

The financial operations of the six State railways and the Commonwealth Government line are shown below.

Australia: Government Railways, 1969-70
Financial Operations
(\$ million)

System	Gross Earnings (a)	Working Expenses (b)	Net Earnings (c)	Plus Other Earnings Payable to Railways (d)	Less Other Expenses Charged to Railways (e)	Surplus or Deficit
N.S.W.	247.3	217.7	29.6	3.2	35.6	- 2.8
Victoria	105.0	118.6	-13.5	..	7.6	-21.1
Queensland . . .	108.8	96.5	12.3	..	26.2	(f)-13.9
S.A.	33.3	(g) 39.0	- 5.7	14.9	7.3	+ 1.9
W.A.	56.0	(g) 55.0	1.1	1.2	11.8	- 9.6
Tasmania	6.9	(g) 9.0	- 2.1	..	1.1	- 3.2
Commonwealth . .	27.6	(g) 27.2	0.5	..	..	+ 0.5
Total Australia . .	585.1	563.0	22.2	19.4	89.7	-49.2

(a) Excludes Government Grants and Road Motor Services.

(b) Excludes Road Motor Services.

(c) Gross earnings less working expenses. See note (a) and (b).

(d) Includes State Government Grants and Road Motor Earnings.

(e) Includes interest and exchange, sinking fund, Road Motor expenses and other expenses charged to Railways.

(f) Includes deficit (\$733,029) on the Queensland 4 ft 8½ in gauge.

(g) Includes provision of reserves for depreciation.

Financial Comparison

In comparing the financial results of the Tasmanian system with those of other authorities, certain difficulties arise from the treatment of depreciation. In the preceding table, working expenses for the Tasmanian, S.A., W.A. and Commonwealth systems include provision of reserves for depreciation. A further complication arises from the fact that interest is not charged against the railways accounts of the Commonwealth system, and, in the Victorian system, only in respect of loan expenditure incurred since 1 July 1960.

To the extent that there is differing treatment of interest and of depreciation provisions in the various systems, the 'surplus or deficit' shown in the table is not a good basis for making comparisons; however, if due allowance is made for interest charges in the case of the Commonwealth system, it will be seen that loss, rather than profit, is characteristic of all Australian systems.

GOVERNMENT OMNIBUS SERVICES**Introduction**

The only Government road services in operation from 8 December 1968 (when the Transport Commission road services were discontinued) are those operated by the Metropolitan Transport Trust at Hobart, Launceston and Burnie. Previous to this date the Transport Commission operated omnibus services throughout the State. In the 1971 *Year Book* a brief summary of the events leading to the abandonment of these services is included; for statistics of these services, refer to the 1970 and earlier *Year Books*.

Metropolitan Transport Trust

Until 1955, tramway, trolley-bus and omnibus services were operated in Hobart and Launceston by the municipal authority in each city. The Hobart system had operated without subsidy but the Launceston system received, as one item of revenue, the annual proceeds from a special tramways rate.

The *Metropolitan Transport Act* 1954 empowered the State to enter into agreements for the acquisition of the two systems and to vest them in the newly constituted semi-government authority named in the Act. After negotiation with the two municipal authorities, the Trust arranged to take over the Hobart system from 28 February 1955, and the Launceston system from 1 July 1955. It was part of the agreement that the Trust should reimburse to the municipal authorities the annual charges relating to the loan debt of each system. Future capital was to come from the State loan fund. During 1959-60, the Trust commenced the operation of omnibus services in Burnie.

The present service is based entirely on omnibuses, although trolley-buses were in use on some Hobart and Launceston routes as late as 1968. It was in October 1960 that the Trust closed down the last of the tramway services in Hobart; Launceston Municipality had closed down all its tramway services before the city transport system was taken over by the Trust in July 1955. One paradoxical feature of recent years is the decline in passenger journeys, despite increases in urban population; increasing motor vehicle ownership explains this trend.

Financial Operations of Trust

The following table shows the income and expenditure of the Metropolitan Transport Trust:

Metropolitan Transport Trust
Income and Expenditure
(\$'000)

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
INCOME					
Traffic Operations	1,962	2,093	2,125	2,235	2,297
Other Earnings	32	31	33	35	35
Subsidy, State Government ..	760	975	875	1,030	1,011
Total	2,754	3,099	3,033	3,300	3,343
EXPENDITURE					
Traffic Operations	1,357	1,505	1,561	1,688	1,785
Maintenance	468	499	518	492	530
Power and Fuel	197	210	235	226	218
Workshop and Stores	34	62	51	49	55
Administration and General ..	308	339	369	405	415
Debt Charges	169	170	157	156	147
Depreciation Charges	215	223	232	234	208
Total	2,749	3,008	3,122	3,250	3,358

Loan Debt of Trust

The loan debt of the Trust is partly in respect of debentures and inscribed stock originally issued by the Launceston Corporation. Debentures originally issued by the Hobart Corporation have been fully repaid, the last instalment being made in 1965-66. At 30 June 1970, loans of this nature stood at \$20,000; net advances from the State Loan Fund stood at \$2,668,000.

Operating Statistics

The next table shows the principal operating statistics for the Metropolitan Transport Trust:

Metropolitan Transport Trust
Operating Statistics

Particulars	1965-66	1966-67	1967-68	1968-69 (a)	1969-70 (a)
Route-miles—					
Trolley-bus (b)	28	28	28	..	..
Omnibus	181	184	191	221	238
Vehicle miles—					
Trolley-bus (b) .. '000	1,120	1,052	773	151	..
Omnibus '000	4,137	4,284	4,604	5,242	5,430
Passenger journeys (c) .. '000	22,397	22,248	21,819	21,246	20,707

(a) Trolley-buses ceased operating in Launceston on 19 July 1968 and in Hobart on 24 November 1968.

(b) At end of period.

(c) Trolley-bus and omnibus to 24 November 1968. Omnibus only from that date.

ROADS AND BRIDGES IN TASMANIA

Scope

Introduction

The details in the following section refer to: (i) 'classified' roads; (ii) roads of local government authorities; and (iii) roads of other government authorities. A further qualification is that the roads are those normally open to traffic.

Revision

Following a re-measurement of the State's road system revisions to the mileages in the various classifications of road surface are proposed. The new distances will not become available until early in 1972, so that the data published in this section is the most up-to-date available. It is anticipated that only minor revisions will be made to the data published below.

Definitions and Mileages

(i) *Classified Roads*: These are roads for which the State Government accepts direct responsibility, the construction and maintenance authority being the Public Works Department. The mileage of classified (or State) roads at 30 June 1970 was as follows: State highways, 1,229 miles; main roads, 662 miles; secondary roads, 193 miles; tourist roads, 47 miles; and developmental roads, 84 miles; total State roads, 2,216 miles.

(ii) *Roads of Local Government Authorities*: The roads for which the local government authorities accepted responsibility at 30 June 1970, included: sealed roads, 2,045 miles; unsealed roads, 7,092 miles; total, 9,137 miles.

(iii) *Roads of Other Government Authorities*: The roads for which other government authorities accepted responsibility at 30 June 1970, included: roads of the Hydro-Electric Commission, 285 miles; Forestry Commission, 2,115 miles; total 2,400 miles. The Hydro-Electric Commission mileage (285) includes the road built from Maydena to the Gordon-Serpentine junction; this 53-mile route in the south-west was opened for public use in June 1967 but permits to travel on it have to be obtained from the controlling authority.

It is not generally recognised that the Hydro-Electric Commission, intent on developing the State's power supplies, has made valuable contributions to Tasmania's road system. Roads, originally built to give access to construction sites, have later been absorbed into the classified road system and therefore are available for general use. This type of development has not come to an end and new roads are likely to result from the future operations of the authority in the Pieman River area of the West Coast, and in the region of the major rivers further south. The main areas where the authority's activities have already affected the road system are in the upper Derwent; Great Lake; Mersey Valley; and remote south-west areas.

Surface of Roads

The following table shows mileages of all roads normally open to traffic classified according to road surface and according to the level of government which accepts responsibility for construction and maintenance. The most striking feature is the increase, over the last five years, in the percentage of State (or classified) roads with sealed surfaces; as the table indicates, the sealed mileage has increased from 63.9 per cent to 79.6 per cent. The majority of the unsealed State (or classified) road mileage is located in the centre of the State, where the high altitude *Lake* and *Lyell* highways present serious construction problems.

Length of Roads According to Nature of Surface at 30 June

Type of Surface	1965	1966	1967 <i>r</i>	1968 <i>r</i>	1969 <i>r</i>	1970
CLASSIFIED STATE ROADS						
Sealed (a) ... miles	1,435	1,492	1,551	1,626	1,702	1,765
Unsealed (b) ... miles	809	754	597	575	505	451
Total ... miles	2,244	2,246	2,148	2,201	2,207	2,216
Sealed Ratio (c) %	63.9	66.4	72.2	73.9	77.1	79.6
ROADS OF LOCAL GOVERNMENT AUTHORITIES						
Sealed (a) ... miles	1,184	1,354	1,539	1,689	1,845	2,045
Unsealed (b) ... miles	7,438	7,373	7,516	7,434	7,240	7,092
Total ... miles	8,622	8,727	9,055	9,123	9,085	9,137
Sealed Ratio (c) %	13.7	15.5	17.0	18.5	20.3	22.4
ROADS OF OTHER GOVERNMENT AUTHORITIES						
Sealed (a) ... miles	47	47	44	52	52	65
Unsealed (b) ... miles	1,625	1,807	1,941	2,037	2,200	2,335
Total ... miles	1,672	1,854	1,985	2,089	2,252	2,400
Sealed Ratio (c) %	2.8	2.6	2.2	2.5	2.3	2.7
ALL ROADS						
Sealed (a) ... miles	2,666	2,893	3,134	3,367	3,599	3,875
Unsealed (b) ... miles	9,872	9,934	10,054	10,045	9,945	9,878
Total ... miles	12,538	12,827	13,188	13,412	13,543	13,753
Sealed Ratio (c) %	21.3	22.6	23.8	25.1	26.6	28.2

(a) Bitumen or concrete.

(b) Includes roads formed or cleared only.

(c) Sealed roads as a proportion of total roads.

Classified (or State) Roads

The next table analyses the mileage of classified roads according to their description and surface. The principal State highways include the following: (i) *Arthur* (46 miles), from Sorell to Port Arthur; (ii) *Bass* (176 miles), from Launceston to Marrawah in the far north-west; (iii) *Channel* (59 miles), from Hobart to Huonville, via D'Entrecasteaux area; (iv) *Huon* (62 miles), from Hobart to Hythe via Dover; (v) *Lake* (93 miles), from Deloraine via Great Lake to Melton Mowbray; (vi) *Lyell* (171 miles), from Granton, near Hobart, to Strahan; (vii) *Midland* (114 miles), from Glenorchy to Launceston; (viii) *Murchison* (48 miles), from Zeehan highway to Waratah area; (ix) *Tasman* (263 miles), from Hobart to Launceston, via East Coast and St Helens; (x) *Waratah* (45 miles), from Somerset to Waratah area.

Classified (or State) Roads
Description and Length at 30 June 1970
(Miles)

Description	Nature of Surface		Total
	Scaled (a)	Unscaled (b)	
Highways	1,082	148	1,229
Main Roads	518	144	662
Secondary Roads	91	102	193
Tourist Roads	4	43	47
Developmental Roads	71	14	85
Total	1,765	451	2,216

(a) Bitumen or concrete

(b) Gravel or stone.

Expenditure on Roads

As indicated in the preface to this section, the responsibility for road construction and maintenance is placed upon the State Government and upon local government and semi-government authorities. The next table gives a detailed analysis only of funds available to the State Government and expenditure from State road funds:

State Road Funds Receipts and Expenditure (Combined Funds)
(\$'000)

Particulars	1967-68	1968-69	1969-70
Receipts—			
State—			
Motor Vehicle Registration, Taxation, Licences, Renewal Fees, Fines, etc.	4,396	4,587	4,827
Loan Fund	1,188	739	1,100
Commonwealth—			
Commonwealth Aid Roads Acts Grants	8,000	8,500	9,100
Local Government—			
Repayment of Advances	32	70	18
Miscellaneous—			
Sale of Plant and Materials	88	54	73
Other	477	250	269
Total	14,180	14,200	15,387
Expenditure—			
Roads and Bridges—Construction and Reconstruction	10,214	9,434	10,908
Maintenance	3,436	3,540	3,806
Purchase of Road Construction Plant and Similar Assets	695	699	855
Hire and Maintenance of Road Plant (Net) (a)	—588	—435	—865
Planning and Research .. .. .	..	..	120
Purchase of Materials	18	22	12
Other Works (Commonwealth Aid Roads Acts)	48	73	17
Grants in Aid to Local Government Authorities	46	54	58
Other Expenditure	329	317	72
Total	14,197	13,704	14,983

(a) Hire of plant and workshop charges less maintenance and operation of road construction plant.

Grants under Commonwealth Aid Roads Acts provide the bulk of the funds with a major contribution also coming from the motoring public. The main item of expenditure is for the construction and reconstruction of roads and bridges.

In addition to the amounts shown above as Motor Vehicle Registration, Taxation, Licences, Renewal Fees, Fines, etc. Stamp Duty is charged on Third Party Insurance and on Motor Vehicle Registrations. These receipts are not paid into State Road Funds, but into Consolidated Revenue:

**Stamp Duty on the Ownership and Operation of
Motor Vehicles paid into Consolidated Revenue
(\$'000)**

Stamp Duty on—	1967-68	1968-69	1969-70
Third Party Insurance	275	291	294
Motor Vehicle Registration	189	342	363

Receipts and Expenditure, Local Government Authorities

Some of the expenditure appearing in the State Road Funds (Combined Funds) table consists of grants from the State Government to local government authorities, although such grants are not specifically dissected. In Chapter 4, 'Local Government', details will be found of: (i) grants from the State to local government authorities for road purposes; (ii) road rates collected by local government authorities; and (iii) expenditure on road construction and maintenance by local government authorities from revenue, and from loan funds.

Bridges in Tasmania

In this section three of the State's major bridges are described. The Tasman and Batman Bridges were described in full detail in the 1967 and 1968 *Year Books* respectively and therefore only their principal features are summarised in this issue; the Victoria Bridge, Devonport, which was officially opened in June 1971, is covered in more detail.

The Victoria Bridge

Site: The new Victoria Bridge is located on the Mersey River Estuary at Devonport, forming part of the east-west dual carriageway route of the Bass Highway connecting Devonport and Burnie.

History: The first Victoria Bridge was opened in May 1902; however, it collapsed in February 1924 after teredo worms had eaten into the wooden piles. A second Victoria Bridge was opened in 1926 and was finally replaced by the present bridge which was officially opened in June 1971, after a construction period of three and a half years.

Description: The new Victoria Bridge is made up of five equal spans with an overall length between abutments of 610 feet. The bridge provides two fifteen-foot traffic lanes, a seven-foot walkway on the downstream side and a three-foot safety kerb on the upstream side. Built on pile-based piers the bridge has a minimum vertical clearance of thirty feet. The piers are 108 feet apart.

The bridge site displays all the typical estuarine characteristics with deposits of silt, sand and gravel overlaying dolerite formations in depths up to 80 feet. Hence, each pier, with the exception of the one adjacent to the eastern abutment, is supported on a group of fourteen, twenty-three inch diameter, steel cased, reinforced concrete piles. The remaining pier, because of the peculiar site conditions is supported by eight, 36-inch caissons.

The slender pier columns are designed to flex and accommodate movements of the bridge superstructure due to shrinkage and variations in air temperature, and provision has been made for expansion of the supporting girders up to $2\frac{1}{2}$ inches. Expansion is channelled through a large roller bearing at the western end of the bridge. The bridge is anchored to the eastern abutment.

The Tasman Bridge

The bridge, constructed at a cost of \$14.4m, is located on the Derwent estuary, a mile upstream from the main port and connects Hobart to its eastern shore suburbs across nearly 1,200 yards of deep water.

Built on pile-based piers, the Tasman Bridge reaches its maximum height in a fixed navigation span giving a minimum clearance of 150 feet to ships passing beneath. The dimensions are:

The Tasman Bridge: Dimensions

Bridge Sections	Number of Spans	Description	Length (feet)
Western spans	(a) 13	From <i>west</i> abutment to pier 13	1,820
Anchor span	1	From pier 13 to pier 14	197
Navigation span	1	" " 14 " " 15	310
Anchor span	1	" " 15 " " 16	197
Eastern spans	(a) 6	From pier 16 to <i>east</i> abutment	840
Total length between abutments			3,364

(a) Each span is 140 feet.

The bridge has four eleven-foot traffic lanes with each bridge-end terminating in three-level interchanges to provide complete separation of the different streams of traffic. The eastern approach to the shore abutment is by a short viaduct of twelve 70-foot spans; the western approach is by grade separation viaducts approximately 400 feet long. When the abutment approaches are taken into account, the whole structure is over 4,600 feet long.

The Batman Bridge

The bridge is located 25 miles downstream from Launceston and crosses the Tamar at Whirlpool Reach; the main ports, Bell Bay, Beauty Point and Inspection Head, are five or six miles further downstream from the bridge which therefore need only give vertical clearance to interstate ships moving south to Launceston (94 feet is provided).

The \$5.2m bridge is a special type of two-lane suspension bridge with the supporting cables running back through the apex of a single giant A-tower on the west bank. This peculiarity in design is the direct result of the marked difference between the Jurassic bedrock of the west bank and the soft tertiary clays of the east bank; with this geological handicap, it was necessary for virtually the whole weight of the river span (675 feet) to be carried by the west bank foundations. The 315 foot A-tower is inclined at 20° to the vertical so that it leans out over the river; as a result, any lateral thrust exerted by the river span is directed back against the west bank.

The dimensions of the Batman Bridge are:

The Batman Bridge: Dimensions

Bridge Section	Description	Length (feet)
Side span	From <i>west</i> abutment to bar of A-tower	180
River span	From bar of A-tower to first east pier	675
First aqueduct span..	From first east pier to second	157½
Three aqueduct spans	From second pier over third and fourth to <i>east</i> abutment	(a) 405
Total length between abutments		1,417½

(a) Each span is 135 feet.

TASMANIAN TRANSPORTATION STUDY

Introduction

In recent years a number of transportation studies has been undertaken in Tasmania but these have dealt mainly with problems in fairly localised areas. A major study, covering the whole of the State and all normal methods of transportation was commissioned by the Government in 1970; the study being undertaken for a \$100,000 fee by a South Australian company.

Terms of Reference

Under the terms of reference, seven main points were to be examined:

- (i) the efficient and economical use of all means of transport now available;
- (ii) the prospects for improvement in utilisation;
- (iii) the inadequacies in frequency and/or tonnage of present shipping services;
- (iv) the best means of securing lower shipping freight rates between Tasmania and other Australian ports;
- (v) a broad assessment of economic factors that may have a direct influence on the integrated transport system;
- (vi) a broad technical assessment of the facilities and capabilities of the railway system, the arterial road system and the ports and harbours having regard to the volume, load and frequency required for an integrated transport system so that an estimate may be made for the cost of upgrading and/or further development of such facilities; and
- (vii) the organisational and financial structure of the Marine Boards as far as they affected port charges and future development.

Proposals

The two key proposals in the final seven-volume report were that Bell Bay should become the central Tasmanian port for non-bulk cargo and that there should be massive reorganisation of the State railway system.

It was estimated that a central port system based on Bell Bay would save a total of \$65m in transport costs over the next 30 years and \$5.5m a year in shipping costs. Adoption of this recommendation would stabilise development at the ports of Burnie and Devonport, but cargo tonnages through Hobart

would be reduced. The report further recommended that existing ports retain and develop their bulk-handling facilities to serve associated industries. Devonport, and less significantly, Hobart, would remain as ports servicing the tourist trade.

The main railway reorganisation proposals were: changing the function of the Launceston railways workshops; reorganisation of railways administration and reduction of the overall workforce; closure of some stations; and the demolition of many of the 900 railways buildings.

Other recommendations, in addition to these key points, included: (i) the development of Lady Barron as Flinders Island's roll-on roll-off port; (ii) shortening of the Bruny Island ferry crossing to a maximum of 2.8 miles; (iii) a port development subsidy to offset transport cost disadvantages; and (iv) setting-up a central port authority to oversight port development in Tasmania.

The report is currently being studied and evaluated by the State government.

MOTOR VEHICLE REGISTRATIONS

General

Statistics in this section deal with: (i) motor vehicles 'on register' at specific dates; and (ii) new motor vehicles registered within a specified period, e.g. a year.

Definitions

Register: To be allowed on the public roads, motor vehicles, except those owned by the Commonwealth Government, are required to be registered with the State Transport Commission; State Government vehicles, as well as privately-owned vehicles, are registered with this authority. Commonwealth Government-owned vehicles, except those belonging to the defence services, are recorded on a separate Commonwealth register. 'On the register', in this section, refers to both the State and Commonwealth registration records, and to all motor vehicles except those of the defence services. Statistics of new motor vehicle registrations comply with the same definition.

Vehicles Included: The statistics cover cars, station wagons, motor cycles and commercial vehicles. Commercial vehicles as defined include utilities, panel vans, trucks and omnibuses. Tractors, trailers, and mobile plant and equipment are excluded.

Because of the multi-purpose nature of rear-door sedans it is possible for these types of vehicles to be registered as either cars or station wagons. In these statistics all rear-door sedans are classified as cars.

Vehicles on Register

The following table has been compiled to show, in summary form, the increase in motor vehicles on the register since 1910. To give a convenient measure of this growth, vehicles on the register have been related to the population (vehicles per 1,000 persons), and increases have also been expressed as annual averages for each decade.

Motor Vehicles on Register from 1910

At 30 June	Cars and Station Wagons	Com- mercial Vehicles	Motor Cycles	All Vehicles		
				Total	Per 1,000 of Population	Average Annual Increase (b)
1910	210	(a)	223	433	2	..
1920	2,404	(a)	1,699	4,103	20	367
1930	12,533	2,198	4,814	19,545	89	1,544
1940	17,598	5,235	3,351	26,184	109	664
1950	25,291	12,928	4,941	43,160	156	1,698
1960	63,748	26,352	3,098	93,198	271	5,004
1969	114,283	33,865	2,751	150,899	389	..
1970	119,274	34,519	3,116	156,909	400	6,371

(a) Included with cars and station wagons.

(b) For decade ending in year shown.

The next table gives details of motor vehicles on the register during the past decade; annual increases are shown to allow comparison with the average annual rates for each decade appearing in the previous historical table.

Motor Vehicles on Register

At 31 December	Cars and Station Wagons	Com- mercial Vehicles	Motor Cycles	All Vehicles		
				Total	Per 1,000 of Population	Annual Increase
1961	70,350	27,177	2,537	100,064	275	4,494
1962	75,697	27,275	2,101	105,073	293	5,009
1963	81,642	28,125	1,856	111,623	308	6,550
1964	88,084	29,005	1,586	118,675	324	7,052
1965	94,039	29,823	1,441	125,303	339	6,628
1966	99,947	31,184	1,562	132,693	355	7,390
1967	104,652	31,908	1,833	138,393	365	5,700
1968	111,163	33,218	2,501	146,882	380	8,489
1969	116,785	34,210	2,948	153,943	394	7,061
1970	122,790	34,753	3,281	160,824	407	6,881

Motor Vehicles on Register in Australia

While different concepts of what constitutes 'motor vehicles on register' at a particular point of time may be appropriate for different purposes, for the purpose of obtaining uniform statistics for all States and Territories, it is necessary to adopt a common concept of what constitutes 'motor vehicles on register' at a particular date. For this series, the Bureau has adopted the concept of motor vehicles on register at a particular date as being:

(i) vehicles whose fees were paid up at that date, in respect of that date; and

(ii) vehicles whose fees were not paid up at that date but subsequently were paid retrospectively to that date (or to an earlier date);

and excluding all vehicles whose fees were not subsequently paid up in respect of that particular date, even though at that date their registrations may not have been formally terminated.

The following table shows details of motor vehicles on the register for each State and Territory at 30 June 1970. The figures are based on a census of motor vehicles which was taken at 31 December 1962 and are subject to revision. They were compiled from data supplied by the various registration authorities and include diplomatic and consular vehicles and all Commonwealth-owned vehicles other than those belonging to the defence services.

Australia: Motor Vehicles on Register, 30 June 1970

State or Territory	Cars and Station Wagons	Commercial Vehicles	Motor Cycles	All Vehicles	
				Total	Per 1,000 of Population
	'000	'000	'000	'000	no.
N.S.W.	1,342	319	49	1,710	374
Victoria	1,068	232	21	1,322	384
Queensland	502	167	20	689	383
S.A.	369	88	14	471	404
W.A.	316	102	12	430	439
Tasmania	119	35	3	157	400
N.T.	15	9	1	25	355
A.C.T.	49	7	2	57	429
Total	3,780	959	122	4,861	387

Registration of New Motor Vehicles

In the next table, details are shown of new motor vehicles registered in Tasmania over a five-year period:

Annual Registrations of New Motor Vehicles

Type of Vehicle	1966	1967	1968	1969	1970
Cars	8,595	9,543	9,915	9,798	10,364
Station Wagons	1,709	1,619	1,396	1,335	1,250
Utilities	1,308	1,243	1,134	1,114	1,144
Panel Vans	500	499	479	522	532
Trucks	789	802	680	777	720
Motor Cycles	272	575	851	763	804
Other (a)	109	88	115	90	109
Total	13,282	14,369	14,570	14,399	14,923

(a) Includes omnibuses, ambulances and hearses.

New Registrations According to Make

The table that follows analyses Tasmanian registrations of new cars and new station wagons according to the make, and illustrates the present popularity of Holden, Ford, Chrysler, Toyota and Datsun makes.

Registrations of New Cars and New Station Wagons, 1970
Classified to Predominant Make

Make	Cars		Station Wagons	
	Number	Proportion of Total Cars (Per Cent)	Number	Proportion of Total Station Wagons (Per Cent)
Austin	358	3.5	..	..
B.M.W.	15	0.1	..	..
Chrysler	852	8.2	101	8.1
Datsun	454	4.4	24	1.9
Fiat	124	1.2	4	0.3
Ford	2,369	22.9	259	20.7
Hillman	309	3.0	47	3.8
Holden	3,632	35.0	681	54.5
Honda	31	0.3	..	..
Isuzu	60	0.6	..	..
M.G.	15	0.1	..	..
Mazda	317	3.1	27	2.2
Mercedes Benz	52	0.5	..	..
Mitsubishi	75	0.7	..	..
Morris	372	3.6	..	..
Peugeot	67	0.6	3	0.2
Rambler	15	0.1	..	..
Renault	87	0.8	..	..
Toyota	718	6.9	42	3.4
Triumph	70	0.7	..	..
Volkswagen	313	3.0	57	4.6
Other	59	0.6	5	0.4
Total	10,364	100.0	1,250	100.0

'Scrapping' of Motor Vehicles

Apart from the few 'veteran' cars owned by enthusiasts, most vehicles are eventually scrapped. No information is collected on the number scrapped each year but the following table contains information from which some inferences may be drawn:

New Motor Vehicles Registered and Annual Increase in Motor Vehicles on Register

Particulars	1966	1967	1968	1969	1970
New Motor Vehicles Registered (a)	13,282	14,369	14,570	14,399	14,923
Annual Increase, Motor Vehicles on Register (b)	7,390	5,700	8,489	7,061	6,881

(a) During year ended 31 December.

(b) Annual increase measured at 31 December.

In comparing the two sets of figures in the previous table, it would be wrong to assume that the difference in each year represented scrapped vehicles only; exceptions would include vehicles transferred interstate and vehicles 'on blocks'—the fact that an owner has let a registration expire does not necessarily mean that he intends to scrap his vehicle. Subject to these and similar difficulties of interpretation, it would appear that about seven thousand motor vehicles have been scrapped annually since 1964.

ROAD TRAFFIC ACCIDENTS IN TASMANIA

Scope of Statistics

With the rapid development of road transport, there has come an increase in the number of road traffic accidents; some merely involve damage to vehicles, but others result in injury or death. To evolve meaningful statistics describing these events, it has been found necessary to narrow the field of observation to those road traffic accidents which involve casualties, since some accidents resulting only in vehicle damage are not reported to the police (the drivers might merely exchange names and report to their respective insurance companies). Further, there is the difficulty of fixing, in monetary terms, some valid standard for determining what degree of vehicle damage warrants inclusion of an accident in a long-term statistical series—obviously \$20 or \$50 for repairs in 1950 is not comparable with \$20 or \$50 for repairs now.

For these and other reasons, the statistics in this section are restricted to details of those road traffic accidents which were recorded by the police involving casualties requiring medical or surgical treatment, or causing death.

Source of Data

Details of each road traffic accident reported to the police, or investigated by the police, are recorded on a standard form and copies are made available to the Transport Commission and to the Bureau of Census and Statistics; at the Bureau, monthly statistics are compiled only from those reports describing accidents involving casualties. The Transport Commission employs the reports it receives in connection with road engineering, the location of traffic signs and signals, the pin-pointing of dangerous locations, traffic engineering, and accident prevention in general.

Responsibility for, and Cause of, Accidents

For the purposes of the statistics in this section, the police officer reporting the accident determines, on the basis of the evidence available, the road user or agency responsible, and also the cause of the accident. The fact that civil or criminal courts may later make different decisions on these matters is disregarded in these statistics; nor is any attempt made to distinguish between accidents giving rise to subsequent legal action and those not doing so.

Causes of Accidents

Causes of accidents in Australian States are classified, for statistical purposes, in accordance with a standard list of 76 prime causes (although, in this section, only the most frequent causes will be shown). Contributory causes and conflicting or incomplete evidence make precise classification difficult. No provision is made to record and classify such antecedent causes as fatigue, the influence of intoxicating liquor, discourtesy, impatience or other driving faults (e.g. 'intoxication' is listed as a possible prime cause but where evidence of intoxication is inconclusive, the reporting police officer usually shows some more immediately apparent cause).

Road Traffic Accidents Statistics

The following table summarises the principal statistics of road traffic accidents involving casualties from 1949-50:

Road Traffic Accidents Involving Casualties, Selected Years from 1949-50

Period	Accidents		Persons			
	Number	Per 10,000 Vehicles Registered (a)	Killed		Injured	
			Number	Per 10,000 Vehicles Registered (a)	Number	Per 10,000 Vehicles Registered (a)
1949-50	969	242	64	16.0	1,154	288
1959-60	743	82	79	8.7	1,004	111
1964-65	1,180	99	97	8.2	1,692	142
1965-66	1,291	103	88	7.0	1,955	155
1966-67	1,356	102	102	7.7	2,081	157
1967-68	1,268	91	112	8.1	1,990	143
1968-69	1,400	95	122	8.3	2,228	151
1969-70	1,413	92	122	7.9	2,268	147

(a) Based on average number of motor vehicles on register during period. 'Vehicles on Register' is defined in the earlier section headed 'Motor Vehicle Registrations'.

It can be inferred from the above table that the annual totals of accidents involving casualties, and of persons killed and injured, have increased at a much slower rate than have motor vehicles on the register. In 1950, there were 43,160 motor vehicles on the register at 30 June, the corresponding figure for 1970 being 156,909; in the period covered by the table, the registration figure has more than tripled, whereas accidents and casualties have less than doubled, and the rates per 10,000 vehicles have fallen significantly.

Location of Accidents

The first table shows the location of accidents in the State:

Road Traffic Accidents and Casualties by Local Government Area, 1969-70

Local Government Area	Accidents Involving Casualties	Persons Killed	Persons Injured
Hobart	310	15	420
Launceston	126	6	192
Glenorchy	125	7	204
Clarence	107	4	162
Burnie	67	7	102
Devonport	55	8	87
Other	623	75	1,101
Total	1,413	122	2,268

Responsibility for Road Accidents

The next table shows the agency or type of road user believed responsible:

Responsibility for Road Traffic Accidents, 1969-70

Responsibility Attributed to—	Accidents Involving Casualties	Persons Killed	Persons Injured
Drivers of Motor Vehicles ..	1,032	87	1,812
Riders of Motor Cycles ..	70	8	80
Pedal Cyclists	32	1	31
Pedestrians	172	19	165
Passengers	2	..	2
Motor Vehicle Defects ..	29	3	51
Motor Cycle Defects ..	..	..	..
Pedal Cycle Defects ..	10	..	11
Animals	7	2	13
Road Conditions	33	1	67
Weather	14	..	14
Parties not Involved (a) ..	11	..	22
Other Causes	1	1	..
Total	1,413	122	2,268

(a) e.g. a car collides with another, after swerving to avoid a pedestrian who is not struck.

Cause of Accidents—Drivers of Motor Vehicles Responsible

The next table analyses accidents for which drivers of motor vehicles were believed responsible:

Road Traffic Accidents, Drivers of Motor Vehicles Responsible, 1969-70
Classification According to Cause

Principal Causes of Accidents for which Drivers of Motor Vehicles (excluding Motor Cycles) were Responsible	Accidents Involving Casualties	Persons Killed	Persons Injured
Excessive Speed Having Regard to Conditions ..	216	31	365
Not Keeping to the Left	96	10	231
Not Giving Right of Way to Other Vehicles at Intersection	210	12	367
Failing to Make Right-Hand Turn at Intersection with Due Care	64	1	107
Intoxicated	120	11	214
Inexperienced, including Inexperience with Type of Vehicles in use at Time of Accident	42	9	71
Inattentive Driving	138	4	220
Reversing Without Care	3	..	4
Overtaking on Near-Side or in the Face of Oncoming Vehicle(s) or Without Enough Clearance	20	2	46
Following Other Vehicle Too Closely	30	2	51
Infirmary of Driver	8	..	13
Driver Asleep or Drowsy	19	2	31
Dazzled by Lights of an Approaching Vehicle ..	10	..	15
Failing to Signal Intention of Turning or Stopping, or Giving Incorrect Signal	6	..	9
Pulling or Swinging out from Kerb Suddenly or Without Warning	14	1	14
Disregarding, Misunderstanding or Failing to Observe Traffic Sign or Signal of Other Driver	16	..	29
Crossing Railway Level Crossing Without Due Care ..	4	1	6
Hit-run Drivers (n.e.i.)	10	1	10
Other Causes	6	..	9
Total	1,032	87	1,812

Causes of Accidents—Pedestrians Responsible

The table below analyses road traffic accidents for which pedestrians were held responsible, in terms of the standard list of causes (after drivers of motor vehicles, pedestrians were reported responsible for the next most numerous group of accidents):

Road Traffic Accidents, Pedestrians Responsible, 1969-70
Classification According to Cause

Principal Causes of Accidents for which Pedestrians were Responsible	Accidents Involving Casualties	Persons Killed	Persons Injured
Walking Across Roadway Without Due Care	68	8	69
Running Across Roadway	26	2	25
Passing Behind or in Front of Moving or Stationary Vehicle or Object	25	3	22
Stepping Off Kerb Without Due Care	3	1	2
Intoxicated	11	..	11
Children Under Seven Years of Age not Under, or Breaking Away from, the Supervision of an Older Person..	32	4	28
Other Causes	7	1	8
Total	172	19	165

Road Features and Accidents

The next table analyses all accidents according to the road features at the site. Most accidents occur on *straight roads*.

Features of Roadways on Which Accidents Occurred, 1969-70

Feature of Roadway	Accidents Involving Casualties	Persons Killed	Persons Injured
At Intersections—			
Controlled	59	..	84
Uncontrolled	419	22	699
Other than at Intersections—			
Straight Road	494	50	698
Bend or Curve—			
View Open	274	34	493
View Obscured	135	10	250
Bridge, Culvert or Causeway	15	1	23
Steep Hill	2	1	3
Top of Hill	6	..	9
Railway Level Crossing	9	4	9
Other Locations .. ..	..	..	..
Total	1,413	122	2,268

Types of Accidents

Most accidents arise from collisions between vehicles, followed by vehicles overturning or leaving the road, as shown in the following analysis:

Types of Accidents, 1969-70

Type of Accident	Accidents Involving Casualties	Persons Killed	Persons Injured
Collisions Between Vehicles	722	51	1,307
Vehicle—			
Overturning or Leaving Road	415	44	668
Colliding With—Fixed Object (incl. parked Vehicle) ..	66	2	84
Animal	7	1	14
Pedestrian	200	23	193
Passenger Accidents	2	..	2
Other Types of Accidents	1	1	..
Total	1,413	122	2,268

Road Users Killed or Injured

In 1969-70, 39 drivers of motor vehicles out of a total of 122 fatalities, were killed in road traffic accidents. Of 2,268 persons injured, 964 were passengers and 959 drivers of motor vehicles. Further details follow:

Type of Road User Killed or Injured, 1969-70

Type of Road User Involved	Killed			Injured		
	Males	Females	Persons	Males	Females	Persons
Drivers of Motor Vehicles ..	31	8	39	786	173	959
Motor Cyclists ..	6	2	8	101	7	108
Pedal Cyclists ..	2	..	2	41	8	49
Passengers (all types) ..	27	22	49	486	478	964
Pedestrians ..	12	11	23	122	64	186
Other	1	..	1	..	2	2
Total	79	43	122	1,536	732	2,268

Age and Responsibility

As shown in a previous table, drivers of motor vehicles (excluding motor cycles) were believed responsible for 1,032 out of the 1,413 accidents involving casualties which were reported to the police during 1969-70. The following table analyses the age and sex of the drivers responsible.

Road Traffic Accidents, 1969-70
Age and Sex of Drivers of Motor Vehicles Responsible

Age Group of Drivers Responsible (in Years)	Male Driver			Female Driver		
	Accidents Involving Casualties	Persons Killed (a)	Persons Injured (a)	Accidents Involving Casualties	Persons Killed (a)	Persons Injured (a)
Under 21	290	28	553	30	4	53
21-29	304	23	546	31	1	61
30-39	102	4	163	21	3	40
40-49	71	6	112	18	..	24
50-59	64	4	92	16	2	19
60 and Over ..	59	5	108	14	6	26
Not Stated (b) ..	11	1	14	1	..	1
Total	901	71	1,588	131	16	224

(a) The age groups relate to the driver who may, or may not be, included in the casualty figures.

(b) Including accidents for which hit-run drivers were responsible.

Days of the Week on Which Accidents Occurred

The following table shows the day of the week on which accidents and casualties occurred:

Road Traffic Accidents, 1969-70
Days of the Week on Which Accidents Occurred

Day of the Week	Accidents Involving Casualties	Persons Killed	Persons Injured
Monday	135	14	205
Tuesday	131	10	188
Wednesday	145	12	198
Thursday	202	13	316
Friday	245	14	366
Saturday	344	37	629
Sunday	211	22	366
Total	1,413	122	2,268

Age and Sex of Road Users Killed

The next table shows the age and sex of the various types of road user killed:

Road Traffic Accidents, 1969-70
Age and Sex of Road Users Killed

Age Group (in Years)	Type of Road User Killed						All Road Users
	Drivers of Motor Vehicles	Motor Cyclists	Pedal Cyclists	Passengers (All Types)	Pedes- trians	Other (a)	
MALES							
Under 7 ..	..	..	..	2	3	..	5
7-16 .. ..	..	..	2	6	3	..	11
17-20	10	3	..	12	..	..	25
21-29	11	3	..	1	1	1	17
30-39	2	..	..	2	1	..	5
40-49	3	..	..	..	..	..	3
50-59	2	..	..	1	1	..	4
60 and over ..	3	..	..	3	3	..	9
Not Stated ..	..	..	..	..	..	..	..
Total ..	31	6	2	27	12	1	79
FEMALES							
Under 7 .. ..	..	..	..	1	2	..	3
7-16 .. ..	..	..	..	5	1	..	6
17-20	2	..	..	2	..	..	4
21-29 .. ..	..	1	..	6	..	..	7
30-39	1	1	..	1	..	..	3
40-49 .. ..	..	..	..	3	..	..	3
50-59	1	..	..	3	2	..	6
60 and over ..	4	..	..	1	5	..	10
Not Stated ..	..	..	..	..	1	..	1
Total ..	8	2	..	22	11	..	43

(a) Riders of animals.

CIVIL AVIATION IN TASMANIA

Introduction

On 16 December 1919 Lt Arthur Long of the Army Flying Corps crossed Bass Strait to Melbourne. Shortly afterwards he started an aerial newspaper-carrying business between Hobart and Launceston.

In 1932, Mr L. Johnson began a Launceston-Flinders Island service and, in the same year, Victor and Ivan Holyman began a similar service with a De Havilland Fox Moth.

The Holyman brothers entered into partnership with Johnson and, by 1933, the company was serving Smithton and King Island. In 1934, the company became Holyman Airways Pty Ltd and operated a Bass Strait service to Melbourne with DH 86 Dragon aircraft.

The first reliable interstate service commenced in 1936 when a DC 2 was introduced on the Victorian route.

During 1936, Holyman Airways and Adelaide Airways Ltd merged to become Australian National Airways Ltd and the new company operated services between all States. Services to and from Melbourne and Sydney (during the Summer season) are provided from Hobart, Launceston, Devonport, Wynyard, Flinders Island and King Island by Trans-Australia Airlines and Ansett Airlines of Australia.

Intrastate Services

Supplementary Intrastate services have operated since May 1964. Aerial Services of Tasmania operate commuter services on the intrastate routes linking Hobart, Launceston, Devonport, Wynyard, Queenstown and Strahan.

Administration of the Air Navigation Act and Regulations in Tasmania

The Federal *Air Navigation Act* 1920-66 and associated regulations are administered for Tasmania by the Regional Director, Victoria-Tasmania region; the authority is the Civil Aviation Department. The department's more important functions include the provision and maintenance of government aerodromes, the licensing of aircraft and pilots, and a responsibility for supervising all aspects of air safety.

Classification of Flying Activities

Flying activities are classified by regulation into the following well-defined categories:

(i) *Private Operations*: Private use of aircraft may be gauged by the fact that there were 510 licensed *private* pilots in the State in April 1971.

(ii) *Aerial Work Operations*: These operations refer to aircraft used for aerial survey; spotting; agriculture; advertising; flying training; ambulance service; police or customs work; or for the carriage of goods owned by the pilot, the owner or the hirer for purposes of trade. Within Tasmania there are four licensed flying training organisations and one aerial agricultural organisation carrying out most of the aerial work activities.

(iii) *Charter Operations*: These refer to aircraft hired for passenger or freight movement, but not according to fixed schedules, or to and from fixed terminals. There were nine licensed charter operators based in Tasmania in 1971.

(iv) *Commuter Operations:* These are charter operations to a fixed schedule, and to or from fixed terminals; they are authorised by an exemption granted under Air Navigation Regulations. Tasmania has one approved operator.

(v) *Regular Public Transport:* This refers to aircraft carrying freight and passengers according to fixed schedule, and operating on specified routes. All services of this kind are provided in Tasmania by T.A.A. and Ansett Airlines.

Tasmanian Aerodromes

The major aerodromes in Tasmania are owned and operated by the Commonwealth Government through the Department of Civil Aviation. The following describes both Commonwealth-owned and other aerodromes in use at 30 June 1971.

Hobart

Hobart airport, Commonwealth-owned, is eleven miles east of the city and ranks seventh in the volume of passengers handled at Australian terminals. It was completed in 1956. Extension and strengthening of the runway, taxiway and aprons to take Electra, DC9 and Boeing 727 aircraft at full weight was completed in 1966. The airport is equipped with complex aviation aids.

Launceston

This Commonwealth-owned airport, ten miles south-east of Launceston, ranks next after Hobart in passenger volume but handles considerably more freight. It has a very adequate runway and a modern terminal building.

The area control centre provides air traffic control for Tasmania via repeater stations, south on Mt Wellington and north on Mt Barrow. The airport also is used for flying training and other light aircraft charter and aerial work operations.

Devonport

The Devonport Commonwealth-owned aerodrome was originally constructed in the early 1930s. In 1950 it was developed to handle DC3, DC4 and Viscount type aircraft and is now active with regular public transport, using F27 aircraft, aerial work, charter, flying training and private operations.

Wynyard

The Wynyard Commonwealth-owned aerodrome has one sealed runway 4,400 feet and one 3,900 feet long for regular public transport operations, charter, aerial work and private operations.

King Island

King Island airport is a Commonwealth-owned aerodrome situated four miles north-east of Currie. It has three gravel runways, night lighting and radio navigational equipment.

Flinders Island

Flinders Island Commonwealth-owned aerodrome is situated three miles north of Whitemark. It has three grassed landing strips strengthened with some gravel and is equipped with aircraft navigation aids and radio.

Smithton

Situated two miles west of Smithton, this licensed aerodrome is owned by the Transport Commission. It has a sealed main runway plus lesser gravel strips and is used for itinerant charter and private flights.

Bridport

The Bridport licensed aerodrome, which is the responsibility of the Transport Commission, was developed for the purpose of air-freighting local produce, mainly fish, direct to Victoria. The landing strip consists of a grassed area 4,000 feet long by 400 feet wide.

St Helens

St Helens has a licensed aerodrome owned and operated by the Municipality of Portland. A grassed strip 3,900 feet long and 300 feet wide is of sufficient dimension to permit operations by DC3 and F27 type aircraft. The aerodrome currently serves the charter, aerial work and private operation requirements for the area and has a non-directional beacon for instrument navigation.

Queenstown

The Municipality of Queenstown provided an authorised landing area for light aircraft in 1937. In 1963, work was commenced on the construction of a runway suitable for the operation of DC3 type aircraft at Queenstown under the Local Ownership Plan; it was opened on 17 April 1966.

Strahan

The port of Strahan serves the West Coast of Tasmania and, in particular, the Queenstown and Zeehan areas. Opened for regular public transport operations in 1964, Strahan aerodrome was constructed under the Commonwealth Aerodrome Local Ownership Plan and is owned by the Municipality of Strahan.

Cambridge

This government aerodrome was constructed during the early days of aviation and comprised four runways. With hills in the near vicinity the site could not be developed and, following construction of the new Hobart Airport, was retained for flying training activities and light aircraft operations.

Aircraft, Passenger and Freight Movements

The following table shows the number of aircraft movements at the principal airports in Tasmania during the past decade. For the purposes of the statistics in this table a take-off is regarded as one movement and a landing as another.

Aircraft Movements: Principal Airports

Year	Hobart	Launceston	Devonport	Wynyard	King Is.	Flinders Is.
1961	6,750	12,190	2,316	2,234	1,424	904
1962	6,233	11,318	2,058	2,142	1,338	772
1963	6,342	11,424	2,126	2,100	1,338	876
1964	8,198	12,136	3,418	3,240	1,430	1,030
1965	8,108	12,085	3,456	3,566	1,408	1,036
1966	7,914	11,299	3,525	3,469	1,342	940
1967	7,680	10,707	4,221	4,350	1,272	770
1968	7,671	11,386	3,754	4,055	1,278	728
1969	7,216	10,658	3,643	4,192	1,212	657
1970	(a) 6,301	10,463	3,649	3,727	1,297	600

(a) The phasing-out of turbo-prop aircraft and the introduction of pure jet aircraft on 'special' (non-scheduled) flights has increased carrying capacity and reduced the number of flights required.

The next table shows the volume of passengers and freight handled at each airport; the following definitions apply:

Passengers: The figures are for fare-paying passengers only at each airport and are the sum of embarkations and disembarkations.

Freight: The figures are the sum (in tons of 2,000 lb) of all revenue freight (including excess baggage) loaded and unloaded at each airport.

Passenger and Freight Movements: Principal Airports (a)

Year	Hobart	Launceston	Devonport	Wynyard	King Is.	Flinders Is.
PASSENGERS ('000)						
1966	167	157	51	44	16	12
1967	183	156	59	57	16	11
1968	190	161	64	54	17	10
1969	198	176	70	60	18	11
1970	209	186	67	64	20	10
FREIGHT (SHORT TONS)						
1966	6,175	8,721	528	756	485	489
1967	6,518	8,093	768	918	407	435
1968	6,193	8,299	653	1,114	458	375
1969	7,027	8,467	322	1,694	452	318
1970	7,392	10,487	320	310	435	207

(a) See definitions prefacing table.

Comparison with Principal Australian Airports

The next table shows the volume of activity at the principal Australian airports in terms of the number of passengers, freight and aircraft movements. Details of international services have been excluded so that comparisons are purely in terms of domestic traffic (international services are centred on Melbourne, Sydney, Brisbane and Perth).

Australia: Principal Airports
Passengers, Freight and Aircraft Movements (a), 1970

Airport	Passengers	Freight (Short Tons)	Aircraft Movements
Sydney	3,492,134	48,085	77,369
Essendon (b)	2,699,069	54,305	58,870
Brisbane	1,278,915	21,497	30,391
Adelaide	1,023,171	15,976	21,008
Perth	617,912	9,090	10,561
Canberra	577,918	3,912	18,262
Hobart	209,368	7,392	6,301
Launceston	186,312	10,487	10,463

(a) See definitions prefacing this section.

(b) Airport for Melbourne. The airport name 'Melbourne' is reserved for the recently constructed international airport.

Hobart ranks seventh in the number of passengers and freight tonnage handled by Australian airports. Launceston is the sixth busiest freight centre in the Commonwealth of Australia.

POSTAL AND TELECOMMUNICATION SERVICES

Development of Communication Services

General

The Commonwealth Postmaster-General's Department provides and controls postal facilities and telecommunication services in Tasmania. Basically the Australian Post Office consists of two services, *postal* and *telecommunications*, supported by engineering, supply, finance and accounting, personnel and administration establishments.

The Postal Service

The first long-distance mail service in Australia was started between Hobart and Launceston in 1816, the carrier walking both ways and taking a fortnight for the round trip.

By 1835 Hobart Town and its environs was served by a thrice daily, two-penny post; today the service is once per day at a cost of seven cents. The number of individual postal articles handled in Tasmania in 1969-70 amounted to 68 million as compared with more than 2,725 million articles handled by the Post Office throughout Australia.

All letter class mail, within the dimensions of *Post Haste*, to and from Tasmania is carried by air, free of airmail surcharge, while the bulk of 'Other Article' mail is received and despatched daily by ship. In the more heavily-populated areas of the State, one mail delivery is made daily except in the Hobart inner-city area where two deliveries are effected. The rationalisation of rural postal services in recent years has preceded improvement of rural mail delivery services.

A recent development of postal services has been the extension of *Priority Paid* mail. This service covers city and some suburban posting points and provides overnight deliveries to suburban areas of all capital cities, including Canberra.

Telecommunications

Hobart and Launceston were linked by a telegraph line in 1857 and two years later a Bass Strait cable was in operation, only to fail in 1861. By 1869 a second cable was laid and communication with overseas countries became possible in 1872 when the Overland Telegraph was established between Adelaide and Darwin.

The first telephone line in Tasmania linked Hobart and Mt Nelson signal station in 1880, both Hobart and Launceston having exchanges by 1883. However, no link with Victoria or overseas countries was provided until 1936.

The State is now served with a network of high-capacity high-quality trunk channels which are extended to other Australian States and linked with the Seacom and Compac cables connecting Australia to overseas countries. There are also links to the Overseas Telecommunications Commission earth satellite stations at Carnarvon, Ceduna and Moree.

Telegraph: The teleprinter exchange (TELEX) had only one Tasmanian subscriber in 1957 but 175 were connected by 30 June 1970. The TELEX service is fully automatic and subscribers can now contact each other without an exchange operator's assistance. Calls can be made automatically to 28 of the 116 overseas countries tied in with Australian telegraphic services, while the remainder can be contacted through an exchange operator.

Telephones: The Post Office is working towards a highly automated telephone system in Tasmania. More than 91 per cent of telephone subscribers in the State are connected to automatic exchanges which provide continuous service.

The installation, in recent years, of the high-capacity trunk channels, known as the Broadband System, together with modern trunk switching exchanges, has enabled the Post Office to provide Subscriber Trunk Dialling (S.T.D.) facilities for the direct dialling of trunk calls. This facility enables subscribers to make direct long-distance calls to anywhere in Australia, where the facility operates, by simply dialling the required number. Nearly 80 per cent of telephone subscribers in Tasmania have access to S.T.D. which avoids the delays associated with manually-operated exchanges. Charges are based on actual time used and there is no minimum time period as with manually booked trunk calls.

Facilities for Data Transmission are also available from the Post Office in Tasmania.

Construction: In recent years, the Post Office in Tasmania has had a policy of installing underground cables which have higher traffic densities. This policy, resulting in a reduction of overhead wires, is illustrated in the following table:

Cable and Aerial Wire Mileages at 30 June

Particulars	1966	1967	1968	1969	1970
Aerial Wire, Single Wire Mileage	57,046	55,403	48,398	45,732	32,815
Conductors in Cable, Single Wire Mileage (a)	518,003	575,073	633,709	698,168	761,300
Co-axial Cable, Tube Miles (a) ..	366	437	437	573	563

(a) Laid underground

Employment

The next tables analyse the total number employed by the Department in Tasmania:

**Postmaster-General's Department
Persons Employed by Category at 30 June 1970**

Full-time Employees (a)	No.	Others	No.
Permanent Officers ..	2,695	Non-Official Postmasters and Staff ..	337
Temporary and Exempt Officers (b)	797	Telephone Office Keepers	12
		Mail Contractors (c)	161
		Part-time Employees	28
	3,492		538

(a) Full-time employees are those directly under the control of the Department. The remainder shown as 'Others' provide services, which may or may not occupy their full time, under contract or in return for payments appropriate to work performed.

(b) Exempt staff are persons exempt from the provisions of the *Public Service Act* (Federal).

(c) Includes persons employed to drive vehicles.

Persons Employed at 30 June (a): Summary

Year			Number	Year			Number
1961	..	..	4,066	1966..	..	..	4,254
1962	..	..	4,077	1967..	..	..	4,247
1963	..	..	4,144	1968..	..	..	4,188
1964	..	..	4,184	1969..	..	..	4,034
1965	..	..	4,169	1970..	..	..	4,030

(a) Total full-time and other persons included in preceding table.

Revenue and Expenditure

The table that follows gives details of the financial operations of the Department in Tasmania. The following points of explanation are necessary:

Cash Receipts: Prior to 1968-69, cash receipts were paid into the Commonwealth Consolidated Revenue Fund; since 1968-69, they have been paid into the Post Office Trust Account which forms part of the Trust Fund of the Commonwealth. In addition, receipt classifications have been reconstituted and cannot be compared with those for earlier years.

Cash Expenditure: Up to, and including 1967-68, cash payments for 'Non-capital Works' and 'Capital Works' were made from the Commonwealth Consolidated Revenue Fund. From 1968-69, cash expenditures were made from the Post Office Trust Account and, as in the case of cash receipts, the new expenditure classifications are not comparable with those used in previous years. Interest and superannuation liability are not brought to account in this table.

Postmaster-General's Department: Financial Operations in Tasmania, 1969-70 (a)

Cash Receipts (b)		Cash Expenditure (c)	
Particulars	\$'000	Particulars	\$'000
Postal	3,767	Salaries and Wages	13,168
Telephone	11,717	Material	5,143
Telegraph	345	Carriage of Mails by Contractors	324
Proceeds of Sales	309	Buildings, Sites and Properties	1,064
Recoverable Works	634	Accommodation Services ..	547
International Services	51	Other (d)	1,146
Total	16,823	Total	21,392

(a) Not comparable with revenue and expenditure details published for previous years; see introduction to this table.

(b) Excludes revenue earned but not actually received.

(c) Excludes expenditure incurred but not actually paid.

(d) Includes Travelling Allowances, Repairs to Plant, Engineering Works and Hire of Vehicles.

Operations of the Department

Apart from its obvious role of providing communication facilities through various media, the Department provides a money order and postal order service and also acts as an agent for a number of other instrumentalities in transactions which include: savings bank deposits and withdrawals; payment of pensions and allowances; War Service Homes repayments; sale of State duty stamps, etc.

Money Orders: An order may be obtained for sums up to \$80 on a single order. Orders for overseas are limited to \$50, and a remitter may send only one such order in any week.

Postal Orders: A system of *postal orders* replaced a system of *postal notes* from 1 June 1966 and from October 1967 postal orders in denominations ranging from 10 cents up to \$8 have been available; they provide security since they can be traced and may also be 'crossed' like a bank cheque. Duplicates can be issued in certain circumstances.

Postal Services

The following table shows the volume of mail handled and the monetary transactions carried out through use of the Post Office in Tasmania:

Postal Services						
Particulars	Unit	1965-66	1966-67	1967-68	1968-69	1969-70
Post Offices—Official	no.	54	55	56	53	52
Non-official	no.	433	421	389	344	322
Postal Traffic (a)—						
Letters, Postcards, etc.	'000	51,710	55,594	55,273	56,516	58,824
Newspapers, Books, etc.	'000	10,309	10,531	10,141	9,425	8,953
Parcels	'000	288	302	303	282	300
Registered Articles	'000	375	379	349	325	312
Money Orders—						
Issued—No.	'000	353	364	322	(b) 271	265
Value	\$'000	11,576	12,690	13,468	(b) 5,870	5,229
Paid —No.	'000	274	298	266	(b) 216	211
Value	\$'000	10,902	12,042	12,727	(b) 5,220	4,516
Postal Orders (c)—						
Issued—No.	'000	356	344	350	378	428
Value	\$'000	384	467	599	731	871
Paid —No.	'000	206	208	201	212	223
Value	\$'000	213	268	351	448	512

(a) Number of separate articles handled.

(b) Prior to 1968-69 figures included Official Money Orders used in bringing to account Telephone Account Collections and War Service Homes Repayments. This practice was discontinued towards the end of 1967-68.

(c) Prior to 1 June 1966, the figures refer to a similar system described in note (b), using *postal notes*.

Telephone and Telegraph Services

The next table shows the extent to which telephone and telegraph services in Tasmania are used:

Telecommunications					
Particulars	Unit	1966-67	1967-68	1968-69	1969-70
Telephone—					
Automatic Service Subscribers	'000	53	57	60	66
Manual Service Subscribers	'000	12	10	10	8
Subscribers with access to S.T.D.	'000	7	39	43	52
Automatic Exchanges	no.	140	148	153	161
Manual Exchanges	no.	191	164	135	112
Value of Calls Made—					
Metered (Local and S.T.D.)	\$'000	4,977	5,441	3,643	4,667
Trunk	\$'000			2,511	2,497
Public Telephone (Local and Trunk) ..	\$'000			418	448
Telegraph—					
Phonograms Lodged	'000	336	340	311	295
All Telegrams Lodged (a)	'000	640	596	582	566

(a) Includes telegrams lodged by telephone (i.e. phonograms).

Telephones: The following table further analyses the telephone services in Tasmania, showing the dissection between *business* and *residential*:

Telephone Services at 30 June: Operating Services
(’000)

Particulars	1966	1967	1968	1969	1970
Services in Operation—					
Business	31.4	32.4	32.4	33.3	35.8
Residential	29.5	31.3	33.4	35.6	37.8
Public Telephones	1.1	1.1	1.2	1.1	1.1
Instruments in Operation ..	86.1	88.9	93.0	98.3	104.8

RADIOCOMMUNICATION

Stations in Tasmania

The section which follows relates to radiocommunication (radio telegraph and radio telephone) stations only; particulars of broadcasting stations and of broadcast listeners’ licences are specifically excluded and are dealt with in a subsequent section.

The following table shows the number of radiocommunication stations and their categories over a number of years:

Number of Authorised Radiocommunication Stations at 30 June
(Two-way Services)

Particulars	1966	1967	1968	1969	1970
Fixed Stations (a)—					
Aeronautical	8	8	8	8	8
Outpost (b)	16	19	19	17	16
Other	42	62	57	61	89
Total	66	89	84	86	113
Land Stations (c)—					
Aeronautical	7	7	7	7	8
Base Stations for—					
Land Mobile Services ..	266	303	319	350	401
Harbour Mobile Services ..	13	13	13	14	16
Coast (d)	22	22	24	29	29
Special Experimental ..	14	17	17	17	17
Total	322	362	380	417	471
Mobile Stations—					
Aeronautical	24	26	26	32	38
Land Mobile Services ..	1,945	2,385	2,588	2,985	3,489
Harbour Mobile Services ..	59	68	75	65	72
Outpost	58	67	66	71	60
Ships	303	370	415	483	507
Total	2,389	2,916	3,170	3,636	4,166
Amateur Stations	174	194	222	238	244
Grand Total	2,951	3,561	3,856	4,377	4,994

(a) For exchange of radio messages with other similar stations.

(b) Stations established in remote localities for communication with control stations, e.g. the lighthouse service.

(c) For exchange of radio messages with mobile stations.

(d) Land stations for communication with ocean-going vessels.

To operate a radio transmitter as previously described, it is necessary to obtain a licence from the Postmaster-General's Department which is responsible for frequency allocation and for certain inspectorial functions. In the previous table, the term 'authorised' refers to equipment licensed by this authority.

Some examples of the use to which this form of communication is put, include: (i) the police networks for intrastate signals and for link with police cars; (ii) coastal radio service to ships at sea (the same service provides links with outpost transmitters in the State's remote areas, e.g. Port Davey); (iii) army network with direct link to Melbourne; (iv) fire brigade network operating in the area controlled by each authority; (v) fishermen's network with base stations at Triabunna, Dunalley, Bicheno, St Helens, Lady Barron, Currie, Stanley and Strahan; (vi) lighthouse network (the source of weather reports at remote coastal stations); (vii) special purpose networks of various authorities, e.g. Hydro-Electric Commission, Forestry Commission, ambulance services, etc.; (viii) marine boards' V.H.F. networks (on single international frequency) for ship-to-shore link with overseas vessels; (ix) the 'mutton birders' network—operating from Whitemark on Flinders Island when the 'birders', in the season, inhabit the otherwise deserted Bass Strait islands; (x) mine networks, e.g. central control linked to outposts engaged in blasting; and (xi) freighting services and taxi networks, etc.

BROADCASTING AND TELEVISION

General

In Australia, broadcasting and television services are provided both from commercial and Commonwealth Government transmitters; the Federal *Broadcasting and Television Act 1942-71* governs the operation of services designated the National Broadcasting Service, the National Television Service, the Commercial Broadcasting Service and the Commercial Television Service.

The National Services

The national services (both broadcasting and television) are provided by the Australian Broadcasting Commission which has sole responsibility for programme material; the actual transmitters are operated by the Postmaster-General's Department. Owners of broadcast and television receivers are required to pay annual licence fees to the Postmaster-General's Department, and this revenue is used to help pay the cost of operating the national services.

The Commercial Services

The commercial services (both broadcasting and television) are operated under licences granted by the Postmaster-General, who, in exercising his licensing powers, takes into consideration recommendations made by the Australian Broadcasting Control Board. The revenue of the commercial services is obtained from advertising. Licence fees, payable to the Australian Broadcasting Control Board, are charged on a sliding scale from one per cent to four per cent of gross advertising revenue.

The Australian Broadcasting Control Board

Although the commercial services are operated as private enterprise undertakings, the Board exercises control in certain fields, by prescribing programme standards, laying down rules for advertising time and advertising content, determining hours of operation, and by establishing and supervising

operational standards. The Board allocates frequencies for transmission and investigates applications for the establishment of stations. In all these functions, it works under the ministerial jurisdiction of the Postmaster-General.

Hours of Transmission

At 30 June 1971, eight commercial broadcasting stations were operating in Tasmania; two in the Hobart area each averaging $135\frac{1}{2}$ hours weekly; six elsewhere in the State averaging 120 hours weekly. The corresponding figures for the two commercial television stations were $72\frac{3}{4}$ hours weekly in the Hobart area, and 69 hours in the Launceston area.

Programme Standards—Commercial Stations

Broadcasting Standards

Licensees are required to provide programmes in accordance with standards determined by the Australian Broadcasting Control Board. These standards contain requirements for the acceptability of programme material and advertising. There are special provisions dealing with family and children's programmes designed to ensure that all programmes broadcast at times when large numbers of children and young persons are likely to be listening will be suitable for this category of listener. Special provisions relate to the duration and suitability of advertisements: with regard to their duration the standards require, for example, that advertisements in a sponsored programme should not exceed 20 per cent of the programme time and that in the case of programmes during which spot advertisements are broadcast, advertisements should not exceed 30 per cent of programme time. Not more than 18 minutes of spot advertising may be included in any period of 60 minutes.

Also under the *Broadcasting and Television Act* 1942-71, licensees are required to broadcast religious services, or other matter of a religious nature during such periods as the Board determines. The minimum time set by the Board is one hour per week but many stations are providing, free of charge, considerably more time than that required for religious broadcasts. The Act also provides that licensees shall, as far as possible, use the services of Australians in the production and presentation of programmes, and that not less than five per cent of the time occupied by the programmes of stations in the broadcasting of music shall be devoted to works of Australian composers.

Television Standards and Australian Content

The Board has prescribed programme standards for commercial television and these, as in the case of broadcasting, contain requirements for the acceptability of programme material and advertising. The standards contain special provisions designed to protect the interests of children and young persons with respect to televising of material prior to 7.30 pm. on any day during periods when there are likely to be large numbers of this category of the population viewing. The advertising standards relate to the suitability, number, content and duration of advertisements: with regard to their duration, the standards make the distinction between prime time (7.00 pm. to 10 pm.) and non-prime time. Broadly, advertisements should not occupy more than 11 minutes in each clock hour in prime time and not more than 13 minutes in each clock hour in non-prime time.

Section 114 of the *Broadcasting and Television Act* provides that licensees of commercial television stations shall, as far as possible, employ the services of Australians in the production and presentation of programmes. Special requirements have been applied on a rising scale, since 1960, to provide that a specified proportion of programmes will be of Australian origin, particularly

those televised in popular viewing times. The requirements at present provide for stations which have completed three years of operation to televise for not less than 50 per cent of total transmission time programmes credited as being Australian in origin and to present Australian programmes between the hours of 7.00 pm and 9.30 pm for at least eighteen hours per four-week period. Of these eighteen hours not less than two must be in the form of Australian drama and at least two hours of Australian programmes must be televised between 7.00 pm and 9.00 pm each week.

New requirements came into force on 20 September 1971 and the main features of the new rules are that the overall requirement of 50 per cent has been retained but credit loadings for British Commonwealth programmes and repeats of Australian drama have been discontinued; four hours monthly of programmes for children of school age (as distinct from pre-school children) are to be provided at times when school children are able to watch; at least six hours of first-run indigenous drama are to be televised each month between 6.00 pm and 10.00 pm; and 45 per cent of programmes televised between 6.00 pm and 10.00 pm is to be Australian.

Category of Television Programmes

The following table shows, as varying proportions of transmission time, the types of programme televised in the Hobart area. The figures are based on a twelve per cent sampling of programmes.

Category of Television Programmes: Hobart, 1970-71

Proportion of Transmission Time

(Source: Australian Broadcasting Control Board.)

Programme Category	Commercial Programmes	National Programmes
	per cent	per cent
Drama	48.3	31.2
Light Entertainment	21.8	10.6
Sport	9.4	9.6
News	6.4	6.9
'Family'	5.5	5.9
Information	2.7	3.4
Current Affairs	2.0	10.5
The Arts .. .. .	..	2.0
Education	3.9	19.9
Total	100.0	100.0

Film Classification

Films imported for televising are classified as suitable for unrestricted viewing (G), not suitable for children (A) and suitable for adults only (AO). Classifications for (A) and (AO) films are advertised before showing.

Television Stations in Operation

The next table gives details of the television stations in operation:

Television Stations in Operation, 30 June 1971

Call Sign and Channel	Area	Transmitter Location	Height Above Sea Level—Top of Aerial (ft)	Hours of Service (Weekly)
NATIONAL				
ABT 2	Hobart	Mt Wellington	4,410	86.30
ABNT 3 (a) ..	NE. Tasmania	Mt Barrow	4,780	86.30
COMMERCIAL				
TVT 6	Hobart	Mt Wellington	4,340	72.45
TNT 9	NE. Tasmania	Mt Barrow	4,654	69.00

(a) Transmits programmes originating from ABT2.

Relay of Television Programmes from Other States

Tasmania is linked with Victoria by a broadband radio link installed by the Postmaster-General's Department which enables the direct relay of television programmes from the mainland States.

Microwave Links and Intrastate Relays

The prime sources of programmes in Hobart are the commercial and national studios which are linked to their Mt Wellington transmitters (TVT6 and ABT2) by micro-wave links; the commercial studio in Launceston feeds programmes to its Mt Barrow transmitter (TNT9) by the same method. As there is no national studio at Launceston, the transmitter on Mt Barrow (ABNT3) relays the Hobart national programmes through the broadband radio link. This service is also available to commercial stations.

Television Translator Stations

Tasmania, due to its terrain, has areas where television reception direct from the Mt Wellington or Mt Barrow transmitters is either difficult or impossible. To provide good reception in such areas, translator stations, which are low-powered stations receiving signals from a parent station and re-transmitting on another channel to areas with poor reception, have been installed as follows:

Television Translator Stations in Operation at 30 June 1971

Area Served	Parent Station		Local Channel	
	National	Commercial	National	Commercial
Queenstown-Zeehan	ABT2	TVT6	4	8
Rosebery-Renison Bell	ABT2	TVT6	1	10
Taroona .. ..	..	TVT6	..	8
Swansca-Bicheno .. ..	..	TVT6	..	8
Smithton-Stanley	ABNT3	TNT9	1	6
Gowrie Park	ABNT3	TNT9	11	1
South Launceston	ABNT3	TNT9	1	11
St Marys-Fingal Valley	ABNT3	TNT9	1	11
Maydena .. ..	..	TVT6	..	8
Waratah	ABNT3	TNT9	2	10
Savage River-Luina	ABNT3	TNT9	4	7
Strahan	ABT2	..	10	..
Strathgordon	ABT2	TVT6	5	8
Derby .. ..	..	TNT9	..	11

De-icing

In view of the temperature and weather conditions existing at Mt Wellington and Mt Barrow, precautions have been necessary to prevent the formation of ice on the aerial elements and the resultant danger of damage from falling ice.

In the case of the aerial at the Hobart national station (ABT₂, Mt Wellington), the aerial elements are heated by mains power which is switched on automatically by means of a thermostat when the temperature falls below freezing point. In the case of the Hobart commercial station (TVT₆, Mt Wellington), the junctions between the coaxial feeder lines and the aerial elements are protected by small plastic covers. In the case of the Launceston (Mt Barrow) commercial station TNT₉ and national station ABNT₃, the whole of the aerial is covered by a plastic cylinder. The lower part of the ABNT₃ mast is metal-sheathed for 190 feet to ward off ice which falls from the plastic cylinder and which could damage the mast.

Broadcasting Stations in Operation

The following table gives details of the broadcasting stations in operation:

Broadcasting Stations in Operation at 30 June 1971

Call Sign	Classification	Location	Hours of Service (weekly)
7ZL	National	Hobart	125.45
7ZR	National	Hobart	126.00
7NT (a)	National	Launceston	126.00
7QN (a)	National	Queenstown	126.00
7HO	Commercial	Hobart	140.00
7HT	Commercial	Hobart	131.15
7AD	Commercial	Devonport	116.30
7BU	Commercial	Burnie	113.30
7EX	Commercial	Launceston	163.00
7LA	Commercial	Launceston	127.30
7QT	Commercial	Queenstown	98.30
7SD	Commercial	Scottsdale	100.30

(a) Transmits, in the main, programmes originating from 7ZL and 7ZR.

Although there are areas of poor reception due to difficult terrain, most of Tasmania receives a satisfactory broadcasting service from one or more of the above stations. In addition, the Northern part of the State receives a service from some mainland stations.

The structure and population distribution in the state has given rise to a regional pattern of broadcasting stations with concentrations in Hobart and Launceston and outlying stations in the north-east, north-west and west.

Listening and Viewing Licences*Revenue from Licences*

The revenue from licences in force in Tasmania for the last decade is shown in the following table. From 1 April 1965 three types of licences: listener's; viewer's and combined were issued. The revenue from each type of licence is not available separately after 1963-64.

Broadcast and Television Licences: Revenue (a)
(\$'000)

Year	Type of Licence (b)		Total Revenue
	Listener's	Viewer's	
1961-62	370	276	645
1962-63	358	426	784
1963-64	356	510	865
1964-65	1,005		1,005
1965-66	1,047		1,047
1966-67	1,127		1,127
1967-68	1,157		1,157
1968-69	1,314		1,314
1969-70	1,397		1,397
1970-71	1,429		1,429

(a) From 1964-65 no breakup is available.

(b) Includes the 'combined licence' from 1 April 1965.

Details of Rates

In general, all persons owning a radio or television set (or both) are required to pay an annual licence fee. Definitions used in the table follow.

Pensioner Rate: Concession rates apply to certain classes of pensioners and licences may be granted free of charge to blind persons over 16 years of age, or to a school. The rates applicable are: Broadcast Receiver, \$1.00; Television Receiver, \$3.00; Combined; \$4.00.

Hirer's Licence: Each broadcast or television receiver let out on hire, except those under hire purchase contracts, must be covered by a hirer's licence held by the person or firm from whom the receiver is hired. Rates: Broadcast Receiver, \$8.00 (Pensioner rate \$1.00); Television Receiver, \$19.00 (Pensioners \$3.00); Combined, \$26.50.

Lodging House Licence: Owners of hotels, motels, guest houses, furnished premises, etc. are required to hold a licence for every broadcast or television receiver provided for the use of guests, lodgers and tenants. Rates: Broadcast Receiver, \$8.00; Television Receiver, \$19.00.

Licences in Force

The following table shows the number of listeners' and viewers' licences in force in Tasmania from 1925:

Licences in Force (a): Listeners' and Viewers' Licences from 1925

At 30 June	Broadcast Listeners'	Television Viewers'	Combined (a)
1925	567	..	..
1930	6,048	..	..
1940	42,191	..	..
1950	64,369	..	..
1960	78,900	4,662	..
1965	62,943	47,173	12,906
1966	32,317	10,309	55,778
1967	21,917	10,708	60,405
1968	14,179	11,532	63,049
1969	12,232	11,896	66,320
1970	10,074	12,317	68,439
1971	8,883	12,752	70,534

(a) The combined receiving licence was introduced in April 1965, to be held by those persons owning both a broadcast and a television receiver at the same address. Separate licences are still available for persons owning only one type of receiver.

Licences and Receivers

The number of receivers in use, both for broadcasting and television, exceeds the number of licences, since the householder or members of his family may operate any number of receivers normally kept at the address shown on the licence. (This concession does not apply to lodging houses.)

Although television transmission did not begin in Tasmania before the first half of 1960 (with ABT2 and TVT6 in Hobart), a few licences were held in the northern areas of the State as early as 1957; the owners of these receivers were able to tune to programmes originating in Victoria.

Zones

The rates for broadcast listeners' licences quoted in a previous table are those applicable to Zone 1 which includes areas within 250 miles of specified broadcasting stations. Zone 2 is defined as the remainder of Australia and persons living in this zone can obtain broadcast listeners' licences at a reduced rate. All Tasmanians live in Zone 1.

Chapter 16

TRADE AND DISTRIBUTION OVERSEAS AND INTERSTATE TRADE

Historical

The *Statistical Returns of Van Diemen's Land* and the *Statistics of Tasmania* provide a continuous series of total trade statistics dating from 1824 to 1909. Until the foundation of the Commonwealth in 1901, trade with other parts of Australia was recorded as originating from or being destined for 'British Colonies'; in other words, all Tasmanian sea trade was regarded as overseas. From Federation to 1909, statistics were collected and compiled by the newly formed Commonwealth Customs Department for *all* sea trade, but since 1910 only direct *overseas* trade has been recorded by the Customs. In an island State, it became apparent that statistics of overseas trade alone were inadequate to record economic activity and, from 1922-23, the Government Statistician collected and published details of interstate trade; the collection of these data, now undertaken by the State Office of the Bureau of Census and Statistics, is carried out independently of the Customs Department and depends primarily on documents made available by Tasmanian Marine Boards and Harbour Trusts. In brief, there is a *total* trade series (1824-1909), an *overseas* trade series (1910 to 1921-22) and a *total* trade series (1922-23 to today).

In the immediate post-war period, there was a marked expansion of commercial aviation; the freight being carried was a component of interstate trade and steps were taken to record it, the first published figures appearing for 1949-50. Thus, the total trade of Tasmania is now recorded in three categories: (1) By Sea, Overseas; (2) By Sea, Interstate; (3) By Air, Interstate.

Value of Trade from 1824

Note on Currency

The pre-Federation details were recorded in sterling; subsequent details were recorded in £A which had parity with sterling until 1930 when devaluation made £A1.25 equal to the £ sterling. In 1949, the £ sterling was devalued by 30.5 per cent and the £A was correspondingly devalued to preserve the 1930-1949 relativity. In 1966, Australia changed to dollar currency, with \$A equal to £A0.5. In late 1967, the £ sterling was devalued from an equivalency of \$A2.51 to \$A2.151. The \$A was devalued by approximately 2.25 per cent against the £ sterling in 1971. The exchange rate between the \$A and the £ sterling is no longer fixed. From December 1971 the \$A bears a fixed relationship to the \$U.S. In the tables in this section, pre-1966 recorded figures have been converted to \$A by simply doubling the originals, *irrespective of their year of occurrence* and no account has been taken of changes in exchange rates.

Due to considerable and persistent changes in the purchasing power of money, it is extremely difficult to satisfactorily interpret any long-term statistical series expressed in money terms. The following table is therefore of interest historically but subject to all the disabilities associated with long-term money series (including devaluations of Australian currency):

**Total Value of Trade by Sea and Air: Historical Summary
(\$'000)**

Year	Value of Imports				Value of Exports			
	By Sea		By Air	Total (a)	By Sea		By Air	Total
	Overseas	Interstate	Interstate		Overseas	Interstate	Interstate	
1824 ..	<i>n.a.</i>	<i>n.a.</i>	..	124	<i>n.a.</i>	<i>n.a.</i>	..	30
1860 ..	1,686	450	..	2,136	1,544	380	..	1,924
1880 ..	738	2,000	..	2,738	1,568	1,456	..	3,024
1900 ..	1,402	2,746	..	4,148	3,078	2,144	..	5,222
1910 ..	1,662	(b)	..	<i>n.a.</i>	1,040	(b)	..	<i>n.a.</i>
1919-20	1,626	(b)	..	<i>n.a.</i>	4,022	(b)	..	<i>n.a.</i>
1929-30	3,668	16,028	..	19,696	4,978	13,198	..	18,176
1939-40	3,188	21,780	..	24,968	4,852	20,954	..	25,806
1949-50	18,704	51,218	(c) 10,670	80,592	29,936	42,672	(c) 3,996	76,604
1959-60	27,606	130,014	19,210	176,830	47,730	137,530	20,818	206,078
1968-69	37,509	241,398	21,050	299,958	102,061	265,476	25,825	393,362
1969-70	46,998	257,441	20,551	324,989	143,470	286,083	26,287	455,840

(a) From 1965-66 the value of outside packages (approximately \$500,000 annually) is included in the value of overseas imports.

(b) Collection discontinued for period 1910 to 1921-22.

(c) First collected in 1949-50.

Definition of Overseas and Interstate

Statistics of overseas trade of Tasmania include details of goods landed directly from overseas or shipped directly to overseas ports; and, in addition, details of goods transhipped through other Australian States, *provided that the overseas import or export document has been lodged with Customs in Tasmania*. Statistics of interstate trade include details of goods landed in or shipped from other Australian States; and, in addition, details of goods transhipped through other Australian States, *provided that the overseas import or export document has been lodged with Customs in another Australian State*.

By way of example, a new Japanese car transhipped in Melbourne and discharged in Tasmania is classified as an item of interstate trade. Victoria, not Japan, is classified as the place of origin, provided that the overseas import document has been lodged with Customs in Victoria.

Effect of Motor Vehicles on Total Value of Imports and Exports

Import and export details of motor cars and commercial vehicles include tourist vehicles entering and leaving the State. The inauguration of the vehicular ferry service by the *Princess of Tasmania* in October 1959 resulted in a sharp increase in the transport of vehicles as suggested in the following table:

**Motor Cars and Commercial Vehicles (a): Value of Imports and Exports
(\$'000)**

Particulars	1958-59	1959-60	1966-67	1967-68	1968-69	1969-70
Imports	19,258	29,148	45,014	49,053	46,982	54,191
Exports	3,654	13,100	19,265	21,359	21,084	25,998

(a) As well as new and used vehicles, includes business and tourist vehicles moving to and from the State.

Since Tasmanians do not carry out motor vehicle assembly on any extensive scale (and certainly not for export), it follows that total import and export values for 1969-70 are both inflated by approximately \$26m worth of vehicles, principally tourist, which entered and left the State. If vehicle exports are offset against imports, the net import figure will still include some used as well as new vehicles.

Source of Trade Statistics

Overseas trade statistics are compiled from documents obtained under the *Federal Customs Act* 1901 and supplied to the Commonwealth Bureau of Census and Statistics by the Department of Customs and Excise. *Interstate sea* trade statistics are compiled from documents required under the authority of the *Marine Act* 1921 and made available to the Tasmanian Office of the Bureau by the various Marine Boards and Harbour Trusts. Statistics of *interstate air* trade are compiled from returns furnished direct to the Tasmanian Office of the Bureau by all those who use this medium for the transportation of goods in commercial or industrial operations.

Values

The cost of importing goods into any country will theoretically contain four elements:

- (i) The 'original' price at door of factory, warehouse, etc.
- (ii) The cost of delivering goods to the ship 'free on board'.
- (iii) Sea freight and associated charges between ports.
- (iv) Cost of delivery from port to buyer.

Trade statistics base values on the first two elements but exclude the third and fourth, as set out in the following definitions:

The basis of value for overseas imports is 'transaction value, actual (*f.o.b.*)' or 'domestic value (*f.o.b.*)' if higher. Overseas exports are valued *f.o.b.* at the Australian port of shipment as follows: (i) for goods sold before export—the price at which the goods were sold; or (ii) for goods shipped on consignment—the current price offering for similar goods of Australian origin in the principal markets of the country to which the goods were despatched. Interstate imports and exports are valued *f.o.b.* at the port of shipment.

Tasmanian Ports

Although there are eight port authorities (known mainly as marine boards or harbour trusts) in Tasmania, overseas trade is restricted to the ports of Hobart, Launceston, Burnie, Devonport and Stanley. (Exports of iron ore from Port Latta, which falls within the jurisdiction of the Circular Head Marine Board, are credited to Stanley.) The names of ports in subsequent tables refer to the towns in which the controlling marine boards are located. Thus 'Hobart' includes Port Huon and, from 1 October 1970, Strahan; 'Launceston' includes Bell Bay and Beauty Point, etc.; 'Stanley' includes Port Latta; 'Currie' includes Naracoopa; and 'Lady Barron' includes Whitemark.

Total Trade of Tasmania

The following table shows Tasmanian total trade and its components in recent years:

Total Trade
(**\$'000**)

Year	Imports				Exports			
	By Sea		By Air	Total Imports	By Sea		By Air	Total Exports
	Overseas	Interstate	Interstate		Overseas	Interstate	Interstate	
1959-60	27,606	130,014	19,210	176,830	47,730	137,530	20,818	206,078
1960-61	37,208	141,086	19,356	197,650	42,588	143,036	21,944	207,568
1961-62	26,788	141,776	18,000	186,564	57,196	140,794	23,298	221,288
1962-63	35,746	150,620	18,158	204,524	66,792	146,454	21,602	234,848
1963-64	35,032	167,964	19,840	222,836	78,318	173,590	23,424	275,332
1964-65	35,717	170,963	20,819	227,499	87,315	193,371	25,770	306,456
1965-66	(a)43,585	192,732	21,123	257,441	92,007	212,785	25,575	330,367
1966-67	51,376	209,456	20,311	281,143	88,834	224,975	25,680	339,490
1967-68	45,024	220,065	20,590	285,679	76,888	233,694	26,941	337,524
1968-69	37,509	241,398	21,051	299,958	102,061	265,476	25,825	393,362
1969-70	46,998	257,441	20,551	324,989	143,470	286,083	26,287	455,840

(a) From 1965-66, value of outside packages (approximately \$500,000) is included in the value of overseas imports.

It will be observed that interstate trade is the major element both in imports and exports. The next table shows the balance of trade (excess of exports over imports):

Balance of Trade (Sea and Air)

Year	Balance of Trade (Excess of Exports)		Year	Balance of Trade (Excess of Exports)	
	Total (\$'000)	Per Head of Mean Population (\$)		Total (\$'000)	Per Head of Mean Population (\$)
1958-59	8,710	25.72	1964-65	78,957	215.51
1959-60	29,248	85.00	1965-66	72,926	197.31
1960-61	9,918	28.33	1966-67	58,347	156.04
1961-62	34,724	98.32	1967-68	51,845	136.66
1962-63	30,324	84.66	1968-69	93,404	242.17
1963-64	52,496	144.71	1969-70	130,851	334.81

Overseas Trade by Sea

From the earliest days, the United Kingdom was Tasmania's main source of overseas imports. Up to 1967-68, it was also Tasmania's major overseas market. However, in recent years, trade with other countries has begun to assume greater importance and in 1968-69, the value of exports to Japan

exceeded the value of exports to the United Kingdom for the first time. Details of Tasmania's trade with overseas countries for the past fifteen years are as follows:

Total Value of Trade by Sea With Overseas Countries
(**\$'000**)

Year	Value of Imports From—				Value of Exports To—			
	United Kingdom	United States of America	Japan	Other Overseas Countries	United Kingdom	United States of America	Japan	Other Overseas Countries
1955-56	10,978	1,864	674	11,368	18,110	4,373	1,219	16,906
1956-57	11,368	2,497	415	13,484	17,780	3,870	2,016	21,337
1957-58	10,779	1,638	532	12,517	18,688	3,988	2,796	19,034
1958-59	8,686	1,626	512	15,550	20,090	4,018	2,102	17,722
1959-60	8,272	2,520	382	16,432	19,880	4,106	2,694	21,050
1960-61	12,960	4,252	1,150	18,846	14,422	3,850	3,344	20,972
1961-62	8,998	2,548	784	14,458	20,536	5,600	4,372	26,688
1962-63	8,840	5,708	1,604	19,594	22,590	6,910	3,968	33,324
1963-64	7,738	5,932	2,770	18,592	25,816	8,498	4,786	39,218
1964-65	7,777	7,954	3,593	16,393	30,872	12,707	4,760	38,976
1965-66(a)	9,935	8,014	5,673	19,963	26,067	14,398	7,970	43,572
1966-67	8,886	10,735	7,385	24,370	20,913	15,737	10,291	41,893
1967-68	13,357	6,835	5,374	19,458	20,219	9,566	9,005	38,098
1968-69	8,705	5,629	5,708	17,467	17,267	16,216	24,362	44,216
1969-70	10,563	6,636	5,309	24,490	24,363	19,945	43,465	55,697

(a) From 1965-66, the value of outside packages (approximately \$500,000) is included in the value of overseas imports.

Principal Overseas Exports

Certain Tasmanian commodities are of great importance in the State's overseas trade. Two selected examples are given below:

Tasmanian Overseas Exports of Selected Commodities
(**\$'000**)

Country of Consignment	1965-66	1966-67	1967-68	1968-69	1969-70
APPLES (FRESH OR PRESERVED BY COLD PROCESS)					
Canada .. .. .	..	35	3	35	117
Denmark	14	354	468	417	435
Finland	259	141	110	197	167
Germany, West	5,367	1,936	2,736	2,232	1,971
Hong Kong	441	300	435	300	476
Ireland	189	84	143	246	228
Singapore (a)	242	588	511	694	912
Sweden	1,239	740	948	918	1,281
United Kingdom	8,764	5,550	6,553	5,740	7,446
United States of America .. .. .	..	11	57	27	104
Other Countries	2,141	645	692	563	411
'For Orders'	41	71	..	..	..
Total	18,697	10,455	12,656	11,369	13,548

Tasmanian Overseas Exports of Selected Commodities—continued
(*\$'000*)

Country of Consignment	1965-66	1966-67	1967-68	1968-69	1969-70
REFINED ZINC					
Belgium-Luxembourg	886	..	..	232	1,395
China—Taiwan	410	600	451	578	566
Mainland .. ..	..	..	..	1,164	3,688
Germany, Federal Republic of	..	52	..	250	1,613
Hong Kong	669	477	364	742	610
India	2,488	3,914	4,210	1,219	2,583
Israel .. ..	..	6	108	131	425
Italy	750	1,084	382	440	537
Philippines	1,486	716	1,609	1,444	1,681
Thailand	1,877	3,053	2,123	2,611	3,134
Turkey .. ..	..	..	..	..	2,281
United Kingdom	5,758	3,342	1,640	2,890	4,460
U.S.A.	3,375	2,985	1,072	3,985	4,484
Vietnam, Republic of .. ..	..	..	..	368	206
Other Countries	2,642	3,635	1,739	1,996	821
Total	20,341	19,864	13,698	18,050	28,484

(a) From 1 October 1965 only; previously included with Malaysia.

(b) Country of consignment not determined at time of export.

Trade with Selected Countries

The principal countries of origin for overseas imports shipped direct to Tasmania in 1969-70 are shown, followed by the value in \$m: U.K., 10.6; U.S.A., 6.6; Japan, 5.3; Canada, 4.2; New Zealand, 3.5; Sweden, 2.9; West Germany, 2.4. The principal countries of destination for overseas exports shipped direct from Tasmania (value in \$m) were: Japan, 43.5; U.K., 24.4; U.S.A., 19.9; Netherlands, 5.9; Thailand, 5.3; West Germany, 4.8; China (Mainland), 3.9; Italy, 3.2.

The next table shows the trade of Tasmania with selected overseas countries; countries selected are those for which imports or exports approached or exceeded \$1m in any one of the three years under review, with the exception of countries for which figures are confidential. It should be noted that some goods are received from, or sent to, overseas countries by transshipment through other Australian States; no data are available on such transactions.

Trade With Overseas Countries
(*\$'000*)

Country of Origin or Destination	Imports (a)			Exports		
	1967-68	1968-69	1969-70	1967-68	1968-69	1969-70
Belgium-Luxembourg	159	233	352	1,985	841	2,099
Canada	2,507	2,265	4,234	230	342	1,066
China—Taiwan	5	3	6	572	617	830
Mainland	342	453	232	..	1,164	3,873
France	412	164	219	2,417	2,986	2,356
Germany, West	2,187	1,898	2,381	3,357	4,743	4,801
Hong Kong	353	332	703	2,122	2,685	2,848
India	238	242	129	4,417	1,383	2,727

Trade With Overseas Countries—continued
(\$'000)

Country of Origin or Destination	Imports (a)			Exports		
	1967-68	1968-69	1969-70	1967-68	1968-69	1969-70
Italy	798	974	751	2,259	4,301	3,242
Japan	5,374	5,708	5,309	9,005	24,362	43,465
Malaysia	5	13	3	1,893	1,666	1,534
Mexico	2	1	1	715	988	507
Netherlands	598	346	532	1,880	4,502	5,866
New Zealand	3,254	3,999	3,501	1,795	1,763	1,625
Philippines	1	..	1	2,340	2,366	2,597
Poland	8	5	4	326	837	616
Singapore	18	5	5	2,066	2,320	2,367
South Africa	271	227	261	451	379	708
Sweden	3,042	2,165	2,909	1,052	949	1,308
Thailand	37	5	48	4,397	4,958	5,252
Turkey	210	25	143	75	..	2,299
United Kingdom	13,357	8,705	10,563	20,219	17,267	24,363
U.S.A.	6,835	5,629	6,636	9,566	16,216	19,945
Yugoslavia .. ..	..	..	1	271	479	1,549
Other Countries	4,936	4,017	8,009	3,478	3,946	5,627
'For Orders' (b) .. ..	..	..	..	..	1	..
Origin Unknown	67	85	46	..	..	..
Australia (Re-Import- ed)	8	10	19	..	..	..
Total	45,024	37,509	46,998	76,888	102,061	143,470

(a) Value of outside packages included; 1967-68, \$650,000; 1968-69, \$474,000; 1969-70, \$566,000.

(b) Country of consignment not determined at the time of export.

Tasmanian and Australian Overseas Trade

The following table compares Australia's total overseas imports and exports with the corresponding values for Tasmania; by using a per capita comparison, certain conclusions can be drawn about the relative importance of Tasmania's overseas exports bearing in mind that Tasmania's figures are understated and Australia's correspondingly inflated in respect of transshipments not recorded as *overseas* trade for Tasmania.

Value of Overseas Trade: Tasmania and Australia

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
IMPORTS					
Australia—Total .. \$'000	2,939,492	3,045,341	3,264,473	3,468,505	3,881,227
Per Head .. \$	255.59	260.09	273.71	285.00	312.10
Tasmania—Total .. \$'000	43,585	51,376	45,024	37,509	46,998
Per Head .. \$	117.92	137.40	118.67	97.25	120.26
EXPORTS					
Australia—Total .. \$'000	2,720,953	3,023,925	3,044,675	3,245,079	4,131,543
Per Head .. \$	236.59	258.26	255.28	266.61	332.04
Tasmania—Total .. \$'000	92,007	88,834	76,888	102,061	143,470
Per Head .. \$	248.94	237.58	202.66	264.61	367.10

The relatively low value of overseas imports per head of Tasmanian population is due largely to the transshipment of goods in other Australian ports. Since some goods go overseas from Tasmania by transshipment and are therefore *not* recorded as Tasmanian overseas exports, the export comparisons *per head* of Australian and Tasmanian populations suggest that the State plays an important role as an earner of export income.

Interstate Trade by Air

No data are compiled to show State of origin or State of destination for trade by air; most planes carrying commercial freights in connection with Tasmanian trade take off from or land in Victoria. The following is a summary of Tasmania's air trade since 1965-66.

Value of Interstate Air Trade
(\$'000)

Particulars	1965-66	1966-67	1967-68	1968-69	1969-70
Imports	21,123	20,311	20,590	21,051	20,551
Exports	25,575	25,680	26,941	25,825	26,287
Total	46,698	45,991	47,531	46,876	46,838

Interstate Trade by Sea

As might be expected with Melbourne being the closest major port to Tasmania, the bulk of the island's interstate trade is transacted with Victoria. The next table shows the value of interstate sea trade with other Australian States. Imports include the value of some goods imported into other States from overseas and transhipped to Tasmania; exports include the value of some goods exported to other States for transshipment overseas.

Value of Interstate Sea Trade
(\$'000)

Australian State of Origin or Destination	Imports			Exports		
	1967-68	1968-69	1969-70	1967-68	1968-69	1969-70
N.S.W.	52,377	45,620	47,156	102,149	102,511	111,692
Victoria	140,733	165,474	177,509	107,765	137,776	148,352
Queensland (a)	5,158	(a) 9,582	(a) 9,650	8,428	9,097	9,080
S.A.	10,912	18,430	19,392	10,163	11,811	12,885
W.A.	2,786	2,291	3,735	5,190	4,281	4,074
Total	220,065	241,398	257,441	233,694	265,476	286,083

(a) Includes the value of manganese ore imported from the Northern Territory. Details are not available for separate publication.

Sea Trade of Tasmanian Ports

In the following table, the value of total imports and exports by sea is shown for each port:

**Total Value of Sea Trade Classified According to Port
(\$'000)**

Port	Imports		Exports		Total Sea Trade	
	1968-69	1969-70	1968-69	1969-70	1968-69	1969-70
Burnie	51,976	56,814	75,841	91,468	127,457	148,282
Devonport	66,301	69,948	56,013	58,589	122,314	128,537
Hobart	89,698	98,910	126,702	142,775	216,400	241,685
Currie	3,062	2,827	7,731	6,576	10,793	9,403
Launceston	64,768	73,301	73,568	92,349	138,335	165,650
Stanley	1,945	1,919	18,362	26,485	20,308	28,404
Strahan	1,152	709	8,629	10,276	9,781	10,986
Lady Barron	5	10	1,051	1,034	1,056	1,044
Total	278,907	304,438	367,537	429,553	646,444	733,991

The next table compares the proportion of total sea trade values attributed to each port (using 1958-59 for comparison):

**Total Value of Sea Trade: Port Proportions
(Per Cent)**

Port	1958-59	1965-66	1966-67	1967-68	1968-69	1969-70
Burnie	15.3	18.0	19.0	20.1	19.7	20.2
Devonport	5.6	19.7	19.6	20.2	18.9	17.5
Hobart	50.8	36.2	34.8	33.6	33.5	32.9
Currie	0.5	1.0	1.3	1.4	1.7	1.3
Launceston	23.5	22.4	22.7	21.2	21.4	22.6
Stanley	0.6	0.3	0.2	0.5	3.1	3.9
Strahan	2.4	2.4	2.3	3.0	1.5	1.5
Lady Barron .. ..	..	..	..	..	0.2	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

The decline in the proportion of sea trade attributed to Hobart since 1958-59 is related to the increasing use of 'sea-road' facilities available through the ports of Devonport, Launceston and Burnie. The vessels involved in the 'sea-road' service to northern and north-western ports are the *Princess of Tasmania*, the *Bass Trader* and the *Australian Trader* (from mid-1969). As from June 1964 similar facilities became available at Hobart when the *Seaway Queen* began a 'sea-road' service to Melbourne, followed by the *Seaway King* operating a Sydney service from September 1964. In January 1965, the *Empress of Australia* commenced a service with Sydney-Hobart-Sydney as one route and Sydney-Bell Bay-Burnie-Sydney as the other.

Air Trade of Tasmanian Airports

Although Tasmania has a number of airports, only six are used on a regular basis for interstate trade; four are located near Hobart, Launceston, Burnie and Devonport respectively and the remaining two on King and Flinders Islands respectively.

The following table shows the value of interstate air trade passing through Tasmanian airports:

**Total Value of Interstate Air Trade Classified According to Airport
(\$'000)**

Airport	Imports		Exports		Total Air Trade	
	1968-69	1969-70	1968-69	1969-70	1968-69	1969-70
Hobart	10,453	10,334	4,195	4,013	14,648	14,347
Launceston ..	6,503	6,221	20,541	21,238	27,044	27,459
Devonport ..	1,559	1,562	263	243	1,822	1,805
Wynyard (a) ..	1,692	1,588	169	181	1,861	1,769
King Island ..	585	574	531	481	1,116	1,055
Flinders Island ..	258	272	126	131	385	403
Total	21,051	20,551	25,825	26,287	46,877	46,838

(a) Including Smithton.

The percentage of the total value of air trade passing through each Tasmanian airport in 1969-70 was: Hobart, 30.6; Launceston, 58.6; Devonport, 3.9; Wynyard, 3.8; King Island, 2.3; Flinders Island, 0.9.

Commodities Carried by Air

It will be observed that the value of trade by air is about six per cent of the value of total trade by sea and air combined. With regard to exports by air (valued at \$26,287,000 in 1969-70), the major group was 'Textile and Yarns' valued at \$24,629,000; exports of all foodstuffs (meat, rock lobster, fruit, etc.) accounted for a further \$959,000. For imports, there is a much greater range of commodities involved, the chief group being 'Clothing and Footwear' valued at \$12,562,000.

The annual values of both imports and exports by air has not varied appreciably over the last ten years; which means that the quantities of goods involved has almost certainly declined because of the increase in prices generally over the period. A possible explanation is the improvement in sea carriage techniques (roll-on roll-off vessels, container vessels, etc.) and improved shipping schedules.

Imports of Principal Commodities

The next table shows the value of the principal commodities imported into Tasmania by sea and air for a four-year period:

**Imports of Principal Commodities by Sea and Air: Values
(\$'000)**

Commodity	1966-67	1967-68	1968-69	1969-70
Beer, Wine and Spirits	3,854	3,730	3,972	4,085
Aluminium Oxide	<i>n.p.</i>	<i>n.p.</i>	<i>n.p.</i>	<i>n.p.</i>
Clothing and Accessories	13,708	13,189	13,453	13,855
Cocoa Beans and Cocoa Butter	<i>n.p.</i>	<i>n.p.</i>	<i>n.p.</i>	<i>n.p.</i>
Footwear	3,076	3,042	3,431	3,627
Machinery—Electrical	12,780	15,031	13,887	15,439
Other	23,575	25,003	20,735	24,589
Metal Manufactures	8,646	8,090	8,465	8,770
Metals	16,901	14,499	13,760	14,767
Motor Vehicles—New	26,287	27,541	25,863	28,513
Other (a)	18,727	21,512	21,119	25,678

Imports of Principal Commodities by Sea and Air: Values—continued
(*\$'000*)

Commodity	1966-67	1967-68	1968-69	1969-70
Ores and Concentrates—Zinc	6,800	5,267	6,160	6,995
Other	4,390	4,263	3,316	5,047
Paper and Paper Manufactures	8,487	8,667	8,819	8,314
Petroleum Products—Motor Spirit	7,299	8,169	8,502	8,314
Fuel Oils	8,262	9,060	11,354	11,664
Other	4,332	4,519	5,599	5,145
Pulp for Paper Making	6,590	5,734	6,346	8,332
Rubber Manufactures	4,342	4,748	4,960	4,959
Sugar, Refined	4,410	4,426	4,104	4,376
Textile Yarn and Fabrics	9,136	9,696	12,294	12,823
Tobacco and Cigarettes	13,258	13,275	13,670	13,428
Wheat	2,729	3,283	3,200	2,852
Wool, Greasy	3,159	3,544	2,313	2,862
Other (b)	70,395	69,391	84,636	90,555
Total Imports	281,143	285,679	299,958	324,989

(a) Mainly tourist and other motor vehicles imported as personal effects.

(b) Includes value details marked 'n.p.'.

The table that follows shows the quantities of the principal commodities imported and has been compiled, as far as this is practicable, to match the preceding table of values.

Imports of Principal Commodities by Sea and Air: Quantities

Commodity	Unit of Quantity	1966-67	1967-68	1968-69	1969-70
Alcoholic Beverages—					
Ale, Beer and Stout	gal	566,994	454,272	550,302	620,352
Wine	gal	502,259	528,584	543,335	548,893
Spirits and Liqueurs—Overseas	pr gal	24,485	17,762	26,302	15,446
In'state	gal	175,842	179,846	171,620	177,783
Aluminium Oxide	n.p.	n.p.	n.p.	n.p.	n.p.
Cocoa Beans and Cocoa Butter	n.p.	n.p.	n.p.	n.p.	n.p.
Iron and Steel	ton	115,757	100,351	92,509	99,911
Motor Vehicles—New	no.	13,217	14,659	13,550	13,692
Other (a)	no.	12,073	13,728	13,548	16,473
Ores and Concentrates—Zinc	ton	245,484	206,848	228,712	261,326
Other	ton	316,791	257,459	218,803	321,493
Petroleum Products—					
Motor Spirit	'000 gal	65,817	69,701	70,303	70,518
Fuel Oils	'000 gal	80,824	88,945	114,908	118,442
Pulp for Paper-making	ton	59,731	54,312	63,026	72,150
Sugar, Refined	ton	24,704	24,198	23,065	24,446
Tobacco and Cigarettes	'000 lb	2,346	2,344	2,393	2,254
Wheat	ton	47,312	52,998	51,234	48,819
Wool, Greasy	'000 lb	5,214	5,687	3,861	4,754

(a) Mainly tourist and other motor vehicles imported as personal effects.

Exports of Principal Commodities

The following table shows the value of the principal commodities exported from Tasmania by sea and air. Unfortunately, the largest item listed is 'Commodities Not Available for Publication' comprising several manufactured items listed in note (c) to the table, separate details of which cannot be published because of confidentiality considerations.

Exports of Principal Commodities by Sea and Air: Values
(**\$'000**)

Commodity	1967-68	1968-69	1969-70
Butter (including Butter Oil)	5,107	5,129	6,950
Cheese	1,854	884	2,957
Fish, Crustaceans and Molluscs	2,708	3,511	3,562
Fruit—Apples (Fresh)	13,702	12,276	13,976
Pears (Fresh)	945	878	929
Processed	1,518	2,434	2,019
Hops	1,454	(a) 1,956	(a) 2,197
Live Animals (Cattle, Sheep and Pigs)	1,786	3,389	3,212
Meat—Beef and Veal	4,463	4,691	7,729
Lamb and Mutton	1,606	1,683	2,560
Other	972	1,615	1,485
Vegetables, Fresh and Preserved	17,425	16,331	15,555
Other Food, Live Animals and Beverages	27,987	30,664	30,346
Fertilisers	607	1,455	1,565
Hides and Skins	2,101	3,214	2,927
Metal Manufactures (including Machinery)	6,848	6,883	7,116
Metals, Refined—Cadmium	1,191	1,386	1,900
Copper	15,063	8,820	9,783
Zinc	33,106	34,006	42,625
Motor Cars and Commercial Vehicles (b)	21,359	21,084	25,998
Ores and Concentrates—Copper .. .. .	.. .. .	296	8,369
Iron	1,281	17,126	25,286
Tungsten	4,308	6,200	5,886
Lead	5,650	6,164	7,358
Tin	6,049	11,538	16,207
Pigments, Paints and Varnishes	11,312	11,218	14,663
Textile Yarn, Fabrics and Made-up Articles	25,487	27,563	27,784
Wool, Greasy	15,041	18,592	17,821
Commodities not Available for Publication (c)	85,784	105,470	122,105
All Other Exports	20,810	26,906	24,970
Total Exports	337,524	393,362	455,840

(a) Excludes the value of a relatively small quantity exported overseas, details of which are not available for publication.

(b) Mainly tourist and other motor vehicles exported as personal effects.

(c) Commodities comprising this item are: aluminium, alumina, ferro-manganese, calcium carbide, cement, paper, paper pulp, hardboard, and plywood.

The next table shows the quantities of the principal commodities exported and has been compiled, as far as this is practicable, to match the table of values:

Exports of Principal Commodities by Sea and Air: Quantities

Commodity (a)	Unit of Quantity	1967-68	1968-69	1969-70
Butter (including Butter Oil)	cwt	176,998	181,949	248,238
Cheese	cwt	82,476	37,988	143,048
Fish—Rock Lobster	cwt	12,037	14,049	13,952
Other (including Molluscs)	cwt	35,076	38,033	37,511
Fruit—Apples (Fresh)	'000 lb	237,897	197,368	225,963
Pears (Fresh)	'000 lb	17,559	14,810	15,188
Preserved	'000 lb	9,343	15,253	12,488
Pulped	'000 lb	1,639	2,621	2,377
Dried	'000 lb	367	761	728
Hops	'000 lb	1,831	(b) 2,445	(b) 2,747
Live Animals—Cattle	no.	8,971	18,117	17,272
Sheep	no.	64,648	136,849	136,784
Pigs	no.	2,405	952	669

Exports of Principal Commodities by Sea and Air: Quantities—*continued*

Commodity (a)	Unit of Quantity	1967-68	1968-69	1969-70
Meat—Beef and Veal	cwt	119,963	122,858	178,092
Lamb and Mutton	cwt	72,372	80,273	113,119
Pork	cwt	15,085	30,382	25,082
Vegetables, Fresh and Preserved	tons	73,162	72,552	56,212
Fertilisers	tons	7,419	26,341	27,613
Hides and Skins—Cattle and Calf	cwt	40,241	48,083	52,663
Sheep	'000 lb	6,001	8,793	7,135
Metals, Refined—Cadmium	tons	256	298	388
Copper	tons	14,483	10,651	7,210
Zinc	tons	118,412	137,276	161,259
Motor Cars and Commercial Vehicles (c)	no.	13,537	13,489	16,821
Ores and Concentrates—Copper	tons	..	1,416	32,310
Iron	tons	104,642	1,367,463	2,059,784
Lead	tons	24,624	27,597	29,889
Tin	tons	3,569	7,270	10,215
Tungsten	tons	1,608	2,186	2,065
Wool, Greasy	'000 lb	30,854	34,830	36,406

(a) Principal commodities not available for publication comprise: aluminium, alumina, ferro-manganese, calcium carbide, cement, paper, paper pulp, hardboard, plywood and confectionery.

(b) Excludes a relatively small quantity exported overseas, details of which are not available for publication.

(c) Mainly tourist and other motor vehicles exported as personal effects.

Exports of Selected Commodities

The following table shows, in summary form, total exports of some important commodities for selected years since 1939-40:

Exports of Selected Commodities by Sea and Air

Commodity	Unit of Quantity	1939-40	1949-50	1959-60	1969-70
QUANTITY					
Butter (including Butter Oil) ..	cwt	55,428	42,886	154,789	248,238
Fruit, Fresh	'000 lb	163,964	125,468	177,876	241,151
Meat	cwt	53,793	22,654	182,313	343,255
Hides and Skins	cwt	62,195	57,296	101,304	116,369
Refined Copper	tons	11,738	4,253	7,624	7,210
Refined Zinc	tons	70,909	80,704	113,853	161,259
Ores and Concentrates	tons	135,052	89,148	84,635	2,140,237
Wool, Greasy	'000 lb	9,092	9,101	27,977	36,406
Timber (Dressed and Undressed)	'000 sup ft	50,858	62,136	75,403	87,824
VALUE (\$'000)					
Butter (including Butter Oil) ..	..	742	1,278	5,390	6,950
Fish, Crustaceans and Molluscs ..	..	68	732	1,362	3,562
Fruit, Fresh .. .. .	..	2,270	4,348	9,490	14,905
Meat .. .. .	..	356	370	3,838	11,774
Hides and Skins .. .. .	..	251	1,199	3,028	2,927
Refined Copper .. .. .	..	1,416	1,478	5,022	9,783
Refined Zinc .. .. .	..	2,856	9,964	22,922	42,625
Ores and Concentrates .. .. .	..	2,144	4,076	5,952	63,478
Textile Yarn and Fabrics .. .. .	..	2,674	5,540	17,524	27,784
Wool, Greasy .. .. .	..	1,376	6,202	15,254	17,821
Timber (Dressed and Undressed)	..	1,238	2,930	8,952	16,238

RETAIL TRADE IN TASMANIA

Censuses of Retail Establishments

Historical

Before the Integrated Economic Censuses of 1968-69, retail censuses were taken in respect of the years ended 30 June 1948, 1949, 1953, 1957 and 1962. The information collected in each census was extensive and provided details of retail trading in local government areas, in statistical divisions, and in special 'statistical retail' areas. The census information was also used as a bench-mark for designing a sample representative of all retail establishments for the purpose of quarterly surveys.

Details of the Census of Retail Establishments 1961-62 appeared in the 1969 and 1970 *Year Books*. This census, supplemented by the results of a special collection covering 1966-67, provided bench-mark data for the current series of quarterly retail surveys. The Census of Retail Establishments 1968-69 was conducted as part of a larger project, the Integrated Economic Censuses 1968-69, when four sectors of the economy were required to make simultaneous returns: Manufacturing; Mining; Wholesaling; and Retailing.

Census of Retail Establishments, 1968-69

Introduction

Full Title: The full title of this census was Census of Retail Establishments and Selected Service Establishments. Previous censuses also included some service type activities.

Change in Method: As related in the previous section of this chapter, censuses of retail establishments and other services were conducted for the years ended 30 June 1949, 1953, 1957 and 1962. The year 1968-69 was covered by five simultaneous censuses, the sectors comprising: (i) retail trade; (ii) wholesale trade; (iii) manufacturing; (iv) electricity and gas industries; and (v) mining.

The Integrated Economic Censuses 1968-69 are fully described in Appendix A where there is an explanation of the need to end the 'old-style' retail censuses and to start a new series, based on new operating unit concepts and new data concepts. In this section, it is intended to give the preliminary results of the 1968-69 retail census for Tasmania, to point out differences between the old-style and new-style censuses but not to discuss reasons for the change (these are set out in Appendix A).

Definition of Retail Establishments

All Activities at One Location: In all the 1968-69 censuses, the basic unit, in general, covered all the operations carried on under the one ownership at a single physical location. The *retail establishment* is thus one predominantly engaged in retailing, but the data supplied for it now encompasses all activities at the location. It covers:

- (i) the retailing activity which is the predominant activity at the location;
- (ii) any wholesaling activity at the location; and
- (iii) any manufacturing or other activities at the location.

Exceptions to this total coverage rule are made where the secondary or subsidiary activity (in terms of gross value) exceeds \$1m, and such locations are treated for statistical purposes as two or more establishments corresponding to the various kinds of activity carried on.

Administrative Offices and Ancillary Units: The retail establishment statistics also include data relating to separately located administrative offices and ancillary units serving the establishment and forming part of the enterprise which owns and operates the establishment. Such units include head offices, storage premises, transport depots and motor vehicle repair and maintenance workshops. Their inclusion in the statistics does not inflate the number of establishments, e.g. a separate storehouse serving only a particular shop and the shop itself are counted as one establishment, classified according to the industry of the shop.

Effects of New Classification

The establishment's classification is based on the Australian Standard Industrial Classification (ASIC). ASIC defines the industries in the economy for statistical purposes and specifies the scope of the different economic censuses without gaps or overlaps. The adoption of ASIC has resulted in changes in scope between the 1968-69 retail census and the earlier retail censuses. The main changes in scope for 1968-69 are as follows:

(i) Motion picture theatres, licensed clubs and laundry and dry cleaning services were added to the 'selected services' group (details were obtained in supplementary collections for 1961-62 but not included in the main retail statistics).

(ii) Activities previously reported in both manufacturing and retail censuses are, by definition, allocated exclusively to the retail sector (i.e. if they were the establishment's major activity). Such activities include: (a) motor vehicle repairs; dry cleaning; shoe repairs; and tyre retreading; (b) custom dressmaking and custom tailoring; clothing repair and alterations; making up and repair of blinds, awnings and curtains; repair of domestic appliances; panel beating and smash repairs; watch and clock repairs; jewellery repairs; and baking of cakes in cake shops. (Group (b) was only included in the 1961-62 retail census if carried on at establishments also making retail sales.) With the adoption of the new criterion of major activity and the use of ASIC, no establishment is required to supply returns in more than one census and all establishments mainly engaged in the above activities are now included in the retail census only.

With regard to (i) and (ii) above, it will be seen that the service activities reported in the 1968-69 retail census are very much the same as in the past.

(iii) Some changes are due to the concept of major activity. Previous retail censuses covered the retailing activities of all establishments which normally sold goods by retail to the general public from rooms, kiosks and yards, irrespective of what their main activity may have been. The 1968-69 retail census excludes locations where the main activity is something other than retailing.

(iv) Some changes in scope are not related to the introduction of ASIC. For example, bread vending and milk vending by independent vendors mainly engaged in retailing bread or milk by home service delivery are included for the first time.

(v) The basic definition of 'retail trade' remains the same: the resale of new and used goods to final consumers for personal and household consumption.

New Data Concepts

The introduction of new standardised data items in all census sectors has involved changes in the content of retail statistics. The new items are defined as follows:

The Value of Turnover: *Equals* Sales of goods owned by the enterprise; *plus* all other operating income; *plus* goods withdrawn from stock for own use as fixed tangible assets or for rental or lease.

In the above definition, all other operating income *includes* commission, repair, servicing revenue, takings from meals and accommodation, hairdressing, theatre admissions, etc. but *excludes* rents, leasing revenue, interest (other than from hire purchase), royalties and receipts from the sale of fixed tangible assets.

Purchases and Selected Expenses: *Equals* purchases of goods for resale and materials for manufacturing; *plus* transfers in from establishments of the enterprise other than retail establishments; *plus* charges for commission and sub-contract work; *plus* purchases of wrapping and packaging materials, electricity and fuel; *plus* repair and maintenance expenses; outward freight and cartage; motor vehicle running expenses; and sales commission payments.

The Value Added: *Equals* turnover *plus* increase (or *less* decrease) in the value of stocks *less* purchases and selected expenses.

Value added is the appropriate measure for comparing various industries and can be added for groups of industries without their being any possibility of duplication.

Transfers: It will be seen that 'transfers out' is not included in the definition of 'turnover'. Transfers of goods between retail establishments of the same enterprise are deducted from the purchases item in the return of the supplying establishment and added to purchases in the receiving establishment's return.

Preliminary Results 1968-69

The tables that follow give preliminary results for Tasmania in the 1968-69 retail census. The results are subject to revision and two elements have not been taken into the calculation of turnover, namely bounties and subsidies, and goods withdrawn from stock for own use, or for rental or lease. Because of this fact, the term, 'turnover' is not used in the tables, the substitute being 'Sales and other operating revenue'. Other work needed to achieve final results includes: (i) further splitting of multi-activity location returns where the secondary activity exceeds \$1m in gross value; (ii) further detailed industry classification.

Non-comparability: Direct comparisons with the results of previous retail censuses cannot be made because of changes in the census units, the scope of the census and the items of data. The same observation applies to estimates obtained from the current monthly and quarterly retail surveys which are conceptually tied to pre-1969-68 censuses.

The following table gives details of the operations of retail establishments and selected services by industry group:

Census of Retail Establishments and Selected Services, 1968-69
Preliminary Summary of Operations by Industry Group

Industry Group	ASIC Code (a)	Establishments Operating During 1968-69	Persons Employed (b)			Wages and Salaries
			Males	Females	Persons	
		no.	no.	no.	no.	\$m
Department, Variety and General Stores	481	38	473	1,467	1,940	3.6
Food Stores ..	482	1,800	2,996	3,845	6,841	6.9
Bread and Milk Vendors ..	483	126	320	62	382	0.3
Clothing, Fabric and Furniture Stores ..	484	556	1,133	2,064	3,197	5.6
Household Appliances and Hardware Stores ..	485	237	972	543	1,515	3.1
Motor Vehicles, Petrol and Tyre Retailers ..	486	865	4,064	859	4,923	9.4
Other Retailers ..	487	503	966	1,326	2,292	2.9
Total Retail Establishments	..	4,125	10,924	10,166	21,090	31.9
Motion Picture Theatres ..	911	42	143	105	248	0.4
Restaurants and Licensed Hotels ..	921	403	1,646	2,372	4,018	6.2
Licensed Clubs ..	922	145	451	89	540	0.9
Laundries and Dry Cleaners ..	931	49	192	374	566	1.0
Hairdressing and Beauty Salons ..	932	253	174	591	765	0.8
Total Selected Service Establishments ..	..	892	2,606	3,531	6,137	9.4
Grand Total ..	..	5,017	13,530	13,697	27,227	41.2

Preliminary Summary—continued

Industry Group	ASIC Code (a)	Sales and Other Operating Revenue (c)	Stocks at 30 June		Purchases, Transfers In and Selected Expenses	Value Added
			1968	1969		
		\$m	\$m	\$m	\$m	\$m
Department, Variety and General Stores	481	28.6	4.1	4.8	21.6	7.7
Food Stores ..	482	100.3	6.6	7.2	80.9	20.0
Bread and Milk Vendors ..	483	4.5	..	..	3.4	1.1
Clothing, Fabric and Furniture Stores ..	484	49.0	10.0	10.6	36.1	13.5
Household Appliances and Hardware Stores ..	485	22.3	4.1	4.4	16.3	6.3
Motor Vehicles, Petrol and Tyre Retailers ..	486	110.7	8.9	9.7	89.7	21.8
Other Retailers ..	487	25.6	4.1	4.4	17.9	8.0
Total Retail Establishments	..	341.0	37.8	41.2	265.8	78.6

Preliminary Summary—continued

Industry Group	ASIC Code (a)	Sales and Other Operating Revenue (c)	Stocks at 30 June		Purchases, Transfers In and Selected Expenses	Value Added
			1968	1969		
		\$m	\$m	\$m	\$m	\$m
Motion Picture Theatres ..	911	1.3	..	..	0.5	0.8
Restaurants and Licensed Hotels ..	921	38.5	1.0	1.0	22.6	15.7
Licensed Clubs ..	922	5.1	0.2	0.2	3.2	1.9
Laundries and Dry Cleaners ..	931	2.2	..	..	0.5	1.7
Hairdressing and Beauty Salons ..	932	2.4	0.1	0.1	0.6	1.9
Total Selected Service Establishments ..	..	49.2	1.3	1.4	27.5	21.8
Grand Total ..	..	390.2	39.2	42.6	293.3	100.3

(a) Australian Standard Industrial Classification.

(b) At last pay day in June; includes working proprietors.

(c) 'Transfers out' are not specified here along with 'Sales' because they are deducted from the purchases item in the return of the supplying establishment and added to the purchases item of the receiving establishment forming part of the same enterprise.

From the returns made by the sample establishments, estimates are calculated quarterly of the total volume of retail sales, and also the total sales of broad groups of commodities. The following table presents estimated value of retail sales in Tasmania for annual periods as derived from the quarterly retail surveys.

Estimated Value of Retail Sales of Goods by Commodity Groups
(\$ million)

Commodity Group	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71
Groceries	35.2	36.5	37.3	40.7	41.4	44.8
Butchers' Meat	17.8	19.4	19.9	19.8	20.7	21.1
Other Food	22.7	24.2	26.1	28.6	30.1	31.1
Beer, Wine, Spirits	20.3	23.3	25.0	26.3	28.6	30.6
Clothing, Drapery, Piece Goods	35.6	39.3	42.4	41.9	44.5	46.9
Footwear	6.0	6.2	6.5	6.7	7.1	7.5
Domestic Hardware	4.5	5.1	5.5	6.1	6.0	6.3
Electrical Goods	11.2	11.7	12.4	12.2	13.1	13.5
Furniture, Floor Coverings ..	8.7	10.1	11.2	12.0	12.8	13.1
Chemists' Goods	9.9	10.5	10.9	12.1	13.4	14.3
Newspapers, Periodicals, etc. ..	6.8	7.4	8.1	8.9	9.4	10.0
Other Goods (a)	19.6	21.3	22.6	24.5	25.7	27.1
Total (excluding Motor Vehicles, etc.)	198.3	215.0	227.9	239.8	252.8	266.3
Motor Vehicles, Parts, Petrol, etc.	77.4	79.9	86.3	87.6	96.9	106.7

(a) Includes sports goods, jewellery, cycles, flowers, plants, etc.

In the next table, details are given of establishments, persons employed and value of retail sales by local government area:

Number of Retail and Selected Service Establishments, Persons Employed and Value of Retail Sales, by Local Government Area, 1968-69

Local Government Area (Statistical Division in Bold Type)	Retail and Selected Service Establishments	Persons Employed (a)	Value of Retail Sales (b)
	no.	no.	\$'000
Hobart—Inner City (c)	464	4,637	61,780
Rest of City	537	3,388	37,195
Total	1,001	8,025	98,975
Glenorchy (H)	366	1,886	27,734
Clarence (H)	193	905	12,237
Brighton (H) (SE)	22	67	756
Glamorgan (SE)	23	92	796
Green Ponds (SE)	11	23	301
Richmond (SE)	15	36	366
Sorell (H) (SE)	40	130	1,651
Spring Bay (SE)	16	53	562
Bruny (S)	9	16	126
Esperance (S)	38	126	1,500
Huon (S)	70	272	2,976
Kingborough (H) (S)	75	273	2,826
New Norfolk (H) (S)	108	473	5,918
Port Cygnet (S)	28	105	1,104
Tasman (S)	17	58	468
Hobart	1,757	11,624	148,422
South Eastern	88	250	2,546
Southern	187	666	7,326
Launceston—Inner City (d) ..	363	3,055	37,944
Rest of City	494	2,159	26,922
North Central	857	5,214	64,866
Burnie	269	1,804	25,514
Circular Head	108	552	5,907
Deloraine	84	346	3,595
Devonport	297	1,619	22,076
Kentish	62	249	2,604
King Island	34	123	1,964
Latrobe	66	226	2,571
Penguin	44	125	1,591
Ulverstone	152	709	8,472
Wynyard	110	463	4,997
North Western	1,226	6,216	79,291
Beaconsfield	112	364	3,533
Fingal	49	145	1,620
Flinders	11	45	608
George Town	58	190	2,949
Lilydale	52	120	1,966
Portland	33	165	1,041
Ringarooma	40	111	1,253
Scottsdale	67	249	2,489
North Eastern	422	1,389	15,459
Evandale	16	47	397
Longford	60	256	2,299
St Leonards	60	201	2,242
Westbury	54	146	1,548
North Midland	190	650	6,486
Bothwell	13	27	393
Campbell Town	27	103	1,094
Hamilton	45	153	1,374
Oatlands	32	112	907
Ross	10	35	284
Midland	127	430	4,053

Number of Retail and Selected Service Establishments, Persons Employed and Value of Retail Sales, by Local Government Area, 1968-69—continued

Local Government Area (Statistical Division in Bold Type)	Retail and Selected Service Establishments	Persons Employed (a)	Value of Retail Sales (b)
	no.	no.	\$'000
Gormanston.. .. . }	83	441	5,013
Queenstown.. .. . }	12	45	403
Strahan }	18	66	740
Waratah }	50	236	2,311
Zechan }	163	788	8,466
Western }			
Total Tasmania.. ..	5,017	27,227	336,914
Urban Hobart	1,551	10,793	138,738
Urban Launceston	999	5,648	70,183

(a) At end of June 1969; includes working proprietors and unpaid helpers working at least 15 hours during the week.

(b) These figures refer to the total value of all commodities sold retail by all retail establishments and similar sales by selected service establishments.

(c) Hobart Inner City consists of an area bounded by the centres of Campbell, Macquarie, Barrack and Brisbane Streets.

(d) Launceston Inner City consists of an area bounded by Cameron and Tamar Streets, a line to the intersection of Elizabeth and George Streets, and Elizabeth and Wellington Streets.

NOTE: Direct comparisons with figures for previous retail censuses are not possible because of changes in the units, scope and items of data.

The following table shows the number of retail and selected service, wholesale, mining, manufacturing, and electricity and gas establishments operating during 1968-69 which reported retail sales. The value of these sales is also shown. Many establishments showed sales for more than one commodity and, accordingly, the sum of the number of establishments showing sales for individual items will exceed the total number of establishments.

Commodities such as basic building materials, builders' hardware and builders' supplies, timber, commercial refrigerators and freezers, agricultural tractors, farm machinery, construction and earth moving equipment, grain feed and agricultural supplies and business machines, although sold by some retailers are treated as wholesale sales.

Retail Sales of Retail and Selected Service, Wholesale, Manufacturing, and Electricity and Gas Establishments, 1968-69

Commodity	Establishments	Retail Sales
	no.	\$'000
Groceries, Other Food Items, etc.—		
Groceries	1,279	49,216
Fresh Meat	481	20,642
Fresh Fruit and Vegetables	926	5,881
Bread, Cakes and Pastries	933	4,516
Bread, Delivered	71	1,269
Milk, Delivered	104	5,416
Fish (Fresh or Cooked), Chips, Hamburgers, etc. ..	251	1,927
Confectionery, Ice Cream, Soft Drinks, Wrapped Lunches, etc.	1,729	10,457
Beer, Wine and Spirits	478	30,633
Cigarettes and Other Tobacco Products	2,226	11,744

**Retail Sales of Retail and Selected Service, Wholesale, Manufacturing, and Electricity
and Gas Establishments, 1968-69—continued**

Commodity	Establishments	Retail Sales
	no.	\$'000
Furniture and Floor Coverings—		
Furniture, Mattresses, Blinds, etc. (including Installation and Repairs)	164	8,609
Floor Coverings, Carpets, Lino, etc. (including Laying of Floor Coverings)	120	4,012
Fabrics, Clothing and Footwear—		
Fabrics, Piece Goods, Manchester, Blankets, Soft Furnishings, etc.	293	7,776
Clothing—Mens and Boys	333	12,701
Womens, Girls and Infants	446	22,405
Footwear—Mens and Boys	301	2,807
Womens, Girls and Infants	268	4,347
Household Appliances—		
Radios, Radiograms, Tape Recorders, etc.	145	2,461
Musical Instruments, Records, etc.	92	1,053
Television Sets and Accessories	129	2,151
Domestic Refrigerators and Freezers	125	2,156
Washing Machines, Stoves, Household Heating Appliances, etc.	135	3,071
Other (a)	219	2,793
Hardware (b)—		
Domestic Hardware (including Garden Supplies and Equipment, Motor Mowers, Household and Garden Fertilisers and Pesticides), China, Glassware	483	6,220
Petrol, Motor Vehicles, Boats, etc. (c)—		
Petrol, Oils and Motor Lubricants, etc.	685	19,367
Motor Vehicles—New	74	31,826
Used	132	24,785
Parts and Accessories for Motor Vehicles—New	405	5,256
Used	71	506
New and Used Motor Cycles, Motor Scooters	36	542
New and Used Motor Tyres, Tubes and Batteries	444	6,464
Boats, Outboard Motors, Caravans	43	2,304
Miscellaneous—		
Cosmetics, Perfume, Toilet Preparations, etc.	578	4,359
Patent Medicines and Therapeutic Appliances	438	3,524
Prescription Medicines	147	4,154
Photographic Equipment and Supplies	288	1,503
Watches, Clocks, Jewellery, Silverware	208	2,540
Sporting Goods, Bicycles, Toys, etc.	321	3,452
Books, Stationery, Newspapers, etc.	571	9,232
Antiques, Disposal Goods, Secondhand Goods (excluding Goods Traded In), etc.	40	n. p.
Cut Flowers, Garden Seeds, Shrubs, etc.	148	852
Travel Goods, Brief Cases, etc.	96	411
Liquefied Petroleum Gas (Bottled)	19	n. p.
Other (n.e.i.)	232	3,441
Total .. .. .	..	349,166

(a) Includes vacuum cleaners, floor polishers, sewing machines, electric shavers, electric blankets and irons, etc.

(b) Excludes basic building materials, builders' hardware and supplies such as tools of trade, paint, etc. See introduction to table.

(c) Excludes tractors, farm machinery and implements, earth-moving equipment, etc.

The following table shows the value of other operating revenue for retail and selected service establishments:

**Value of Other Operating Revenue
Retail and Selected Service Establishments, 1968-69**

Item	Establishments	Other Operating Revenue
	no.	\$'000
Repair and Service Revenue—		
Household Electrical Appliance Repairs	92	1,392
Panel Beating, Spray Painting, etc.	172	3,959
Other Motor Vehicle Repairs	392	7,721
Motor Vehicle Lubricating, Washing and Cleaning ..	358	729
Motor Cycle and Motor Scooter Repairs	25	<i>n.p.</i>
Retreading, Recapping of Tyres, etc.	77	693
Boot and Shoe Repairs	69	386
Other Repairs	113	1,139
Other Revenue—		
Hiring or Leasing of—Household Appliances, Radios, etc.	43	<i>n.p.</i>
Other Consumer Goods	17	106
Takings from—Meals	453	9,291
Mens Hairdressing	117	501
Womens Hairdressing	169	1,932
Accommodation	257	3,364
Laundering	<i>n.p.</i>	653
Dry Cleaning, Dyeing, etc.	<i>n.p.</i>	1,536
Receipts from Theatre Admissions and Screen Advertising	41	1,072
Other	605	2,783
Total .. ..	..	37,526

Quarterly Estimates of Value of Retail Sales

Each quarter, returns of retail sales are collected from a fraction (or sample) of all the retail businesses recorded in the most recent census of retail establishments, the fraction being selected to represent the field covered by the census. This sample is varied from time to time to make provision for 'new' establishments opening up, 'old' establishments closing down and 'old' establishments changing type ('old', in this context, relates to businesses as recorded at the most recent census of retail establishments). The basis of the present sample is the Census of Retail Establishments 1961-62 (with a major revision made after a special collection covering the year 1966-67). The information necessary to keep the sample representative of the field covered is gathered at annual intervals.

Surveys of Retail Establishments

Data from the Census of Retail Establishments 1968-69 was used as the bench-mark for a new series of quarterly retail sales estimates which began in 1972.

WHOLESALE TRADE

Introduction

Censuses and surveys of retail trade were introduced by the Bureau of Census and Statistics in the late 1940s; a continuous quarterly series shows retail sales for the last 20 years or so in terms of broad commodity groups. Developments in this field occupied all the resources available and the problem

of creating a matching wholesale series had to be deferred. However, a pilot census was conducted covering wholesale trading in 1963-64, the aim being to identify the various categories of wholesalers and to discover the various types of operation.

The results of the pilot census were not published but they served to show the definitional framework necessary for a full-scale census, and to highlight differences between retail and wholesale operations (e.g. the greater relative importance in the wholesale sector of sales on commission).

The decision was taken to defer any full-scale wholesale census until 1968-69 when simultaneous censuses were being held in other sectors of the economy, the more relevant being those covering manufacturing and retailing. The link between wholesaling and these two sectors is easily apparent: manufacturers often market through wholesalers, and wholesalers in turn are suppliers of goods to retailers. The inclusion of all three sectors in three simultaneous censuses meant that there need be no overlaps or gaps in coverage.

Census of Wholesale Establishments, 1968-69

Introduction

The year 1968-69 was covered by five simultaneous economic censuses, the sectors comprising: (i) wholesale trade; (ii) retail trade; (iii) manufacturing; (iv) electricity and gas industries; (v) mining. The 1968-69 census was the first full census of wholesale trade conducted by the Bureau. The integrated economic censuses 1968-69 are fully described in Appendix A and readers will find there an explanation of the need to end the old-style censuses covering (ii) to (v) above, and to start new series based on new reporting unit concepts and new data concepts. This first census of wholesale trade was also based on the new concepts.

Definition of Wholesale Establishment

All Activities at One Location: In all 1968-69 censuses, the basic census unit, in general, covered all the operations carried on under the one ownership at a single physical location. The *wholesale establishment* is thus one mainly engaged in wholesaling but the data supplied for it encompasses all activities at the location. It therefore covers:

- (i) the wholesaling which is the major activity at the location;
- (ii) any retailing activity at the location; and
- (iii) any manufacturing or other activity at the location.

Exceptions to this total coverage rule are made where any secondary or subsidiary activity (in terms of gross value) exceeds \$1m and such locations are treated for statistical purposes as two or more establishments corresponding to the various kinds of activity carried on.

Administrative Offices and Ancillary Units: The wholesale trade statistics also include data relating to separately located administrative offices and ancillary units serving the establishment and forming part of the enterprise which owns and operates the establishment. These are units such as head offices, storage premises, transport depots and motor vehicle repair and maintenance workshops. However, their inclusion does not affect the number of establishments, e.g. a wholesale establishment and a separately located ancillary transport depot are counted as one establishment classified according to the activity at the wholesaling location.

Standard Classification: The Australian Standard Industrial Classification (ASIC) defines the industries in the economy for statistical purposes and specifies the scope of the different economic censuses to avoid gaps or overlaps between them. It also sets out standard rules for identifying the statistical units (e.g. establishments) and for coding them to the industries of the classification. Each establishment in the wholesale census is identified in terms of a particular location and all sales, employment, etc. are recorded for that location, regardless of the size of the territory covered, i.e. irrespective of where customers are located. For this reason, all sales, etc. of the wholesale establishments located in the State of Victoria, for example, are credited to Victoria, even though the sales territories may extend over several States. Thus the census results for Tasmania should not be interpreted as covering all wholesale sales made in Tasmania, but as total wholesale sales made *by establishments located in Tasmania*.

Data Concepts

The basic data items include:

Value of Turnover: *Equals* sales of goods on own account; *plus* transfers out of goods; *plus* commissions received for purchasing and selling; *plus* goods withdrawn from stocks for own use; or for rental or lease; *plus* all other operating revenue.

In this definition, all other operating revenue *includes* repair and service revenue, and leasing revenue from hiring out machinery and equipment without operators for periods exceeding one year, but *excludes* rents and leasing revenue (from other than wholesale activity), interest (other than from hire purchase) and receipts from sales of fixed tangible assets.

Purchases and Selected Expenses: *Equals* purchases of goods for resale and materials for manufacturing; *plus* transfers in of goods; *plus* charges for commission and sub-contract work; *plus* purchases of wrapping and packaging materials; and electricity and fuel; *plus* repair and maintenance expenses; outward freight and cartage; motor vehicle running expenses; and sales commission payments.

Value Added: *Equals* value of turnover and other operating revenue; *plus* increase (or *less* decrease) in the value of stocks, *less* purchases and selected expenses.

Value added is the appropriate measure for comparing various industries and can be added for groups of industries without there being any possibility of duplication.

Transfers: In the previous definitions, the terms 'transfer in' and 'transfer out' occur. The transactions refer exclusively to transfers between establishments of the same enterprise.

Types of Wholesale Operation

In the tables that follow, the following broad categories are established:

(i) *Primary Produce Dealers or Agents:* Establishments mainly purchasing produce direct from farmers, graziers, fishermen, etc. or selling produce on commission to such producers; included are all establishments of the country 'stock and station agent' type.

(ii) *Wholesale Merchants:* Establishments mainly selling goods owned by the enterprise and not bought direct from primary producers. A further dissection separates out 'import and/or export merchants' as a special sub-set.

(iii) *Manufacturers' Sales Branches Holding Stocks*: Establishments mainly selling goods manufactured by other establishments of the same enterprise *provided* (a) the sales branch is separately located from all manufacturing establishment locations; and (b) it supplies goods direct to customers from stocks physically held at premises occupied or controlled by the branch itself.

(iv) *Commission Agents or Broker*: Establishments mainly selling or purchasing goods on commission for other enterprises (except those selling on behalf of primary producers, included in (i) previously; and on behalf of oil companies, included in (v) following).

(v) *Petroleum Distributors*: Establishments mainly dealing in petroleum products, either on account of the enterprise or on commission for other enterprises.

(vi) *Repairers and Lessors of Machinery and Equipment*: Establishments mainly repairing farm machinery or business machines, or leasing machinery or equipment without operators for periods exceeding one year. These activities are included in wholesale trade because they are usually performed by establishments whose main activity is the wholesale distribution of machinery. Other repair activity which is usually performed by manufacturing establishments is, of course, included in the manufacturing census.

Preliminary Results 1968-69

The tables that follow give preliminary results for Tasmania in the 1968-69 wholesale trade census. The results are subject to revision for these reasons: (i) the splitting of multi-activity locations under the \$1m rule has not been completed; (ii) the detailed industry classification of establishments has not been carried out; (iii) transfers have still to be valued on a more consistent basis; (iv) one element has not been taken into the calculation of 'turnover', namely 'goods withdrawn from stocks for own use as fixed tangible assets, or for rental or lease'. Because of this last fact, the term 'turnover' is not used in the tables, the substitute being 'Sales on own account, transfers out and other operating revenue'.

Census of Wholesale Establishments, 1968-69
Preliminary Summary of Operations by Broad Type of Operation

Type of Operation	Establishments Operating During 1968-69	Persons Employed (a)			Wages and Salaries	Sales on Commission (b)
		Males	Females	Total		
	no.	no.	no.	no.	\$m	\$m
Primary Produce Dealers or Agents	88	1,295	390	1,685	4.9	56.5
Wholesale Merchants						
Import and/or Export	58	325	126	451	1.1	1.6
Other	492	3,746	934	4,680	12.3	5.2
Manufacturers' Sales Branches Holding Stock	102	558	168	726	2.2	11.0
Commission Agents or Brokers	106	220	145	365	0.5	21.6
Petroleum Distributors	57	394	71	465	1.5	54.7
Repairers and Lessors of Machinery and Equipment ..	17	55	8	63	0.1	..
Total Wholesale Trade	920	6,593	1,842	8,435	22.7	150.7

Preliminary Summary—continued

Type of Operation	Establishments Operating During 1968-69	Sales on Own Account, Transfers Out and Other Operating Revenue	Stocks at 30 June		Purchases, Transfers In and Other Selected Expenses	Value Added
			1968	1969		
	no.	\$m	\$m	\$m	\$m	\$m
Primary Produce Dealers or Agents	88	44.9	5.2	5.4	36.1	8.9
Wholesale Merchants						
Import and/or Export	58	24.6	3.3	3.2	21.3	3.2
Other	492	158.4	23.5	25.2	132.8	27.3
Manufacturers' Sales Branches Holding Stocks	102	32.3	3.3	3.5	25.1	7.3
Commission Agents or Brokers ..	106	3.4	0.2	0.2	2.0	1.5
Petroleum Distributors	57	23.4	1.4	1.9	18.2	5.7
Repairers and Lessors of Machinery and Equipment ..	17	0.7	..	0.1	0.3	0.4
Total Wholesale Trade ..	920	287.6	37.0	39.5	235.9	54.2

(a) At last pay period in June; includes working proprietors.

(b) The *commission* from these sales is included in the calculation of 'value added' (since commission received is a component of 'other operating revenue') *but the sales themselves are excluded* from the calculation.

The next table gives an area analysis of three measures appearing in the previous table: (i) number of establishments; (ii) persons employed; and (iii) wages and salaries. For reasons of confidentiality, it is not possible to list out data for the 49 local government areas but details are given for the larger centres.

**Number of Wholesale Establishments Operating,
Persons Employed and Wages and Salaries in Selected Areas, 1968-69**

Local Government Area (Statistical Division in Bold Type)	Wholesale Establishments	Persons Employed (a)	Wages and Salaries
	no.	no.	\$'000
Glenorchy	59	623	1,891
Hobart—Inner City (b)	155	1,473	4,004
Remainder of City	170	1,717	4,930
Remainder of Statistical Divisions	22	139	242
Hobart	406	3,952	11,067
South Eastern and Southern	31	166	258
Burnie	58	723	2,010
Circular Head	13	96	205
Deloraine	11	30	61
Devonport	49	520	1,389
Ulverstone	12	68	185
Remainder of Statistical Divisions ..	29	172	409
North Western and Western	172	1,609	4,258

**Number of Wholesale Establishments Operating,
Persons Employed and Wages and Salaries in Selected Areas, 1968-69—continued**

Local Government Area (Statistical Division in Bold Type)	Wholesale Establishments	Persons Employed (a)	Wages and Salaries
	no.	no.	\$'000
Launceston—Inner City (c) ..	70	794	1,917
Remainder of City ..	162	1,565	4,218
North Central	232	2,359	6,135
North Eastern	38	124	303
North Midland	26	196	644
Midland	15	29	64
Total Tasmania	920	8,435	22,729
Urban Hobart	394	3,834	10,860
Urban Launceston	250	2,527	6,764

(a) At the end of June 1969; includes working proprietors.

(b) Hobart Inner City consists of an area bounded by the centres of Campbell, Macquarie, Barrack and Brisbane Streets.

(c) Launceston Inner City consists of an area bounded by Cameron and Tamar Streets, a line to the intersection of Elizabeth and George Streets and Elizabeth and Wellington Streets.

The following table shows the number of wholesale, retail and selected service establishments operating during 1968-69 which reported wholesale sales made on their own account. The value of these sales is also shown. Many establishments showed sales for more than one commodity item and, accordingly, the sum of the number of establishments showing sales for individual items exceeds the total establishments reporting wholesale sales.

Wholesale Sales of Wholesale, Retail and Selected Service Establishments, 1968-69

Commodity	Establishments	Sales on Own Account
	no.	\$'000
Agricultural and Pastoral Products and Supplies—		
Livestock	7	1,567
Wool	8	1,464
Hides, Skins, Raw Furs, Leather and Tallow	11	4,721
Wheat and Other Cereal Grains	42	2,052
Other Farm Products (n.e.i.)	14	2,061
Farm and Garden Supplies	228	12,691
Metals and Minerals—		
Iron and Steel	24	4,646
Scrap Metal	8	1,044
Other	13	1,682
Machinery and Equipment (including Parts)—		
Agricultural	86	10,119
Construction and Earthmoving	30	7,811
Manufacturing and Mining, etc.	73	10,567
Commercial and Service Establishments	37	1,610
Professional and Scientific	18	1,218
Business Machines, including Computers	36	2,130
Electrical and Electronic Equipment (n.e.i.)	52	6,983
Building Materials and Supplies—		
Timber, Plywood and Veneers	91	10,046
Glass	24	1,040
Other Basic Building Materials	71	10,325
Builders' Hardware and Supplies	274	19,094

**Wholesale Sales of Wholesale, Retail and Selected Service
Establishments, 1968-69—continued**

Commodity	Establishments	Sales on Own Account
	no.	\$'000
Pharmaceuticals, Toiletries and Chemicals—		
Chemicals and Allied Products (n.e.i.)	22	2,155
Medical and Pharmaceutical Products	33	4,230
Toiletries, Perfumes and Cosmetics	27	1,191
Soap and Detergents	31	1,516
Petroleum, Petroleum Products and Fuel—		
Petroleum and Petroleum Products	18	18,833
Liquefied Petroleum Gas	3	n.p.
Coal, Coke, Briquettes and Charcoal	6	n.p.
Vehicles and Transport Equipment—		
Motor Vehicles	16	5,613
Motor Vehicle Parts, Accessories and Engines	24	5,777
Tyres and Wet Cell Batteries	20	2,319
Other	8	96
Household Appliances, Furniture, etc.—		
Household Appliances	61	8,789
China, Glassware, Kitchenware, etc.	53	1,401
Garden Equipment	15	310
Furniture, Mattresses and Blinds	18	413
Floor Coverings	16	1,428
Clothing, Footwear and Textile Products—		
Mens and Boys Clothing	20	1,905
Womens, Girls and Infants Clothing	20	1,302
Footwear	14	735
Textiles and Textile Products, n.e.i.	20	967
Foodstuffs—		
Meat	14	9,714
Dairy Products, Smallgoods and Poultry	42	7,427
Eggs and Egg Pulp	9	653
Fresh Fruit and Vegetables	40	17,106
Fish	31	5,759
Confectionery	36	4,636
Groceries, Food Lines Only	53	23,173
Tea	17	1,607
Coffee	16	1,703
Other	17	1,026
Beverages and Tobacco Products—		
Soft Drinks	17	564
Wine and Brandy	18	1,960
Beer and Other Spirits	22	4,720
Cigarettes and Other Tobacco Products	24	9,769
Miscellaneous—		
Books, Periodicals and Other Printed Matter	11	1,366
Paper, Paper Products and Stationery	48	3,363
Photographic Goods	7	n.p.
Watches, Clocks, Jewellery, etc.	16	118
Sporting Goods and Bicycles	17	1,178
Toys and Games	29	678
Fancy Goods, Gifts and Souvenirs	19	357
Other (n.e.i.)	153	7,668
Total	(a)	277,020

(a) As many establishments show sales for more than one commodity the sum of establishments showing sales of individual items will exceed the total number of establishments reporting wholesale sales.

Appendix A

AUSTRALIAN ECONOMIC CENSUSES

CENSUSES PRE-1968-69

Census by Sectors

Before 1968-69, the Bureau conducted censuses of economic activity in certain sectors of the economy. For example, manufacturing industry statistics were compiled from the regular annual factory censuses that were begun in the first decade of this century. Statistics of mining collected by the Bureau were first put on a uniform basis in 1952 when regular annual censuses of mines were initiated. In the field of retail trade, censuses were conducted at irregular intervals (years ended 30 June 1948, 1949, 1953, 1957 and 1962).

Each Sector in Isolation

A characteristic of these earlier censuses was that each tended to be *self-contained* and to be conducted in *isolation*. It is possible, however, to name many establishments which do not fit neatly into a single census sector. A good example is a manufacturing bakery which may be simultaneously a factory, a wholesaler and a retailer. Another such example is a service station with repair facilities; definitionally such an establishment was partly a factory (car repair being then treated as a factory activity) and partly a retailer. For the purpose of the earlier censuses, establishments such as these needed to dissect their accounts and operations to produce details relevant to the economic activity covered by a particular census (e.g. a service station would be included, for its sales, in a retail census; and for its repair work, in a factory census).

Censuses of Establishments

Another characteristic of earlier censuses was their concentration on *establishments* as the basic unit for reporting data. Of course, most business units in the community are still organised on a basis where no fine distinction need be made between the operations of the *enterprise* and the operations of the *establishment* (e.g. the corner grocery operated by a sole proprietor); in many cases, the accounts of the *enterprise* and the accounts of the *establishment* are one and the same for all practical purposes.

However, there are also many cases of *multi-establishment enterprises* (ranging from the interstate chain-store company to the sawmiller operating mills at two or more different sites). A multi-establishment enterprise may have all its establishments operating in a single census sector (e.g. all retailing) or it may have establishments operating in a number of census sectors (e.g. manufacturing, wholesaling, retailing). In previous censuses, the existence of multi-establishment enterprises was ignored; and the basis of collection was forms addressed to individual establishments which happened to carry on the form of economic activity covered by the particular census. Interstate owner-

ship was also ignored and each State Office of the Bureau collected returns for the establishments within its own State boundaries, despite the fact that the headquarters of the parent enterprise, in some cases, might be located in another State.

Classification of Data

Since each of these earlier censuses tended to be designed and conducted in isolation, the classification and aggregation of data were carried out to describe the special characteristics of the particular economic sector under scrutiny. For example, there was no *standard industrial classification* that could be applied to all businesses; instead, there was a particular classification evolved to suit each economic sector. There were also differences in the treatment of accounting data; for example, factories were required to report value of output (i.e. value at the factory door) whereas retailers were required to report actual sales.

List of Businesses

In general, the list of businesses on which any one census was based had no relationship with the lists used for other economic sectors because each subject matter branch of the Bureau endeavoured to build up and maintain a comprehensive list of businesses operating in the particular census sector for which it was responsible. Naturally these lists could overlap and the same business could be recorded on two or more lists and asked to report on different aspects of its operations in different censuses.

The Integration Concept

In this description of pre-1968-69 censuses, attention has been called to certain defects. Improvements could have been made one at a time but each would have affected the comparability of previous statistical series and therefore a piece-meal programme of change was rejected. Instead the decision was taken to make all changes simultaneously and to introduce new and improved concepts in *five simultaneous censuses* covering the year 1968-69. The key word in describing the 1968-69 censuses is *integration*.

INTEGRATED ECONOMIC CENSUSES, 1968-69

Reference

The material that follows is based substantially on Chapter 31 of the *Commonwealth Year Book* 1970, the subject being listed as 'Australian Integrated Economic Censuses, 1968-69'. This Tasmanian version attempts some condensation but readers wanting the full text are advised to consult the *Commonwealth Year Book*.

The Meaning of Integration

For 1968-69, censuses of mining, manufacturing, retail trade and wholesale trade were conducted for the first time on an *integrated* basis. Electricity and gas production and *distribution* formed the subject of the fifth census (electricity and gas production, but not distribution, had previously been included in manufacturing censuses).

The manufacturing and mining censuses for 1968-69, embodying the new concepts, were still part of the series of regular annual censuses conducted for these industries, but the mining census was changed from a calendar year

to a financial year basis. Retail censuses had been taken irregularly, the last covering the year 1961-62. Wholesale trade had not been the subject of a census before, apart from an initial investigation in 1963-64.

The integration of these five censuses for 1968-69 meant that for the first time they were being collected on the basis of: (i) a common framework of reporting units; (ii) a common framework of data concepts; and (iii) a standard industrial classification. As a result, the statistics for the industries included in the censuses contain no overlaps or gaps in coverage and yield certain important aggregates such as: (i) value added; (ii) employment; (iii) salaries and wages; (iv) fixed capital expenditure; and (v) stocks. Such aggregates are now obtained on a consistent basis for all sectors of the economy covered by the censuses.

To achieve this integration, all previous census forms had to be revised to incorporate the new uniform definitions and concepts. For businesses operating at one location only (these are the majority), the amended form was the only change. For businesses operating at more than one location, the other principal change was that census returns were collected through the head offices of the enterprises, each of which was asked to report in a consistent way for each of its 'in-scope' establishments and also for the enterprise as a whole. (An 'in-scope' establishment is broadly one with operations covered by any of the five censuses.)

Purposes of Integration

Broadly, the aim of integrating economic censuses was to increase substantially the usefulness and comparability of statistics already being collected and published for purposes of general economic analysis and market research.

Aggregation of Economic Data

The pre-1968-69 censuses of manufacturing, mining and retail trade were originally introduced and developed to provide statistics for particular industries; special definitions of reporting units and data were designed for users of statistics of those industries. But there has also been rapidly growing interest in statistics describing the economy as a whole; hence the post-war development of series such as: employment and earnings; surveys of capital expenditure; surveys of stocks; surveys of wages; and the whole field of national accounts statistics.

Because of the special-purpose nature of each of the pre-1968-69 censuses, there were no common definitions of data nor was there a common system of reporting units; therefore aggregation of statistics from different censuses was impossible. Further, since no standard industrial classification existed, industrial boundaries were not defined to eliminate overlaps or gaps between census sectors. This again made aggregation across industry boundaries impossible. These factors made it extremely difficult, if not impossible, to use the census results in conjunction with series describing the economy as a whole.

Benchmark Data for Surveys

There are a number of important Bureau surveys covering the economy as a whole, the aim being the production of quarterly economic statistics by means of sampling. The reporting units employed in most of the surveys are payroll-tax payers broadly consisting of businesses (or the parts of interstate businesses operating in one State) with payrolls of more than \$20,800 a year. But the reporting unit in pre-1968-69 censuses was the establishment, often a census unit not directly comparable with the survey unit.

To take an example: the pre-1968-69 manufacturing census unit was an establishment engaged in manufacturing activity and employing four or more persons or using power in any manufacturing process. The census form required the exclusion of selling and delivery activity, since the value of output was to be reported exclusive of delivery costs and employment was to exclude sales and delivery staff. Thus a single-location enterprise recorded as a pay-roll tax unit would be quite different from the same enterprise recorded statistically as a manufacturing establishment (to the extent that certain activities would have been excluded, by definition, from the latter unit).

To take another example: the pre-1968-69 retail census unit was an establishment selling goods to the public from fixed premises but the definitions required the exclusion of any wholesaling, manufacturing or other non-retailing activity carried on at the same location. Obviously a single-location enterprise recorded as a pay-roll tax unit could be quite different from the same enterprise recorded statistically as a retail establishment (to the extent that certain activities might have been excluded, by definition, from the latter unit). Other important differences existed but it is not intended to go beyond these two examples.

Since each pre-1968-69 economic census covered a large and important sector of the economy, they should ideally have furnished benchmark data for designing or adjusting the sample surveys. For the reasons just given, no such direct use could be made of them and there were indeed very serious obstacles to the reconciliation of statistics from economic censuses with those obtained from sample surveys.

National Accounts

The compilation of national accounts statistics is a function of the Central Office of the Bureau. A full account of the relation between the Integrated Economic Censuses and the compilation of national accounts statistics; input-output tables; flow-of-fund tables; and national balance sheets is contained in Chapter 31 of the *Commonwealth Year Book* 1970. Sufficient for this article is the statement that the concepts developed for the Integrated Economic Censuses are completely compatible with the concepts used in national accounts.

Statistics for Different Levels of Unit

In compiling data for a specific purpose, a particular level of unit can be nominated as peculiarly appropriate. For example, if the aim is a simple geographical distribution of wages and salaries allied with a broad industrial classification, then establishments are the natural unit. (If enterprises were chosen as the unit, then two difficulties would immediately arise: (i) multi-establishment enterprises with establishments in more than one State; and (ii) multi-establishment enterprises with establishments classified to more than one industry group.) On the other hand, if the aim is recording interest receipts and payments for national income purposes, then the enterprise, rather than the establishment, is a more appropriate unit. For other purposes an even more complex unit, the *enterprise group*, may be more appropriate than either the establishment or the enterprise.

One aim of integration has been to integrate the units at the various levels. This involves collecting data in such a way that reconciliation is made between the different levels of detail in each return, or set of returns, collected from each enterprise: commodity sales with establishment sales, establishment sales with enterprise sales, and so on. It also requires the facility to re-cast statistics collected and published for one level of unit to make them comparable with those for a higher level unit.

Enterprise Statistics

The establishment as used in economic censuses is defined mainly in terms of location, rather than in terms of ownership or management. With the growth of multi-establishment enterprises, especially those cutting across several industry boundaries, there has been increasing interest in statistics about enterprises as economic entities. These are the statistics relevant for comparisons with such things as the financial performance of companies, derived from company accounts or from taxation statistics, and in studies of the competitive position of firms. Size-distributions based on establishments can give only a partial picture of the structure of industries; they have to be supplemented by size-distributions of the enterprises engaged in the industry.

The enterprise statistics needed for these purposes must relate to all forms of business units, unincorporated businesses as well as companies. For some purposes, statistics based on operating legal entities as the collection unit are needed; other statistics may need to be based on groups of such legal entities operating under common ownership or control.

Provision for Extension of Economic Censuses

The problems referred to earlier which have arisen from the specialised nature of the units and data concepts used in the existing economic censuses are likely to increase with the extension of economic censuses into other industries. The census of wholesale trade could not have been introduced without close attention being paid to its boundaries with manufacturing and retail trade. Two problems in definition and treatment had to be overcome in advance: (i) sales branches of manufacturing enterprises; and (ii) wholesaling activity by retailers. Similar problems arise with the planned future introduction of a census of construction. This industry, like wholesale trade, has areas which overlap with manufacturing and these have required special attention in the new standard industrial classification, the aim being to avoid gaps or duplication.

Steps in Integration

To meet the purposes of integration as described in this section it was necessary to take four major steps which will ultimately affect most if not all economic censuses and surveys conducted by the Bureau:

(i) *Standardisation of census units*: defining business units at standard levels, corresponding to the strata in the business structure for which various types of economic statistics are required and can be collected; devising standard rules for identifying such business units.

(ii) *Establishment of an integrated register of business units*: identifying and recording in a register the standard units for all businesses to be covered by economic censuses and surveys.

(iii) *Standardisation of the industrial classification*: adoption of a common system of classification suitable for all censuses and surveys, to which all the standard business units to be covered would be classified without gaps or duplication.

(iv) *Standardisation of data concepts*: defining in common terms the basic items of data for which statistics are required across all industries covered by economic censuses and surveys, to permit comparison and aggregation.

Standardisation of Census Units*Types of Unit*

The business units standardised for the integrated economic censuses are at three levels:

- (i) the establishment;
- (ii) the enterprise;
- (iii) the enterprise group.

The key unit from which information is collected is the enterprise, defined broadly as an operating legal entity. Where a number of legal entities operate as a group, owned or controlled by a single company, the enterprise is not the group as a whole, but each individual operating legal entity in the group. However, a group of legal entities owned or controlled by a single company is recognised as a separate type of unit, namely the enterprise group.

The collection of census returns is made from enterprises but enterprise groups may later be used for the aggregation of certain census data originally collected from enterprises. Certain types of survey data (e.g. overseas investment and local capital raisings) are best based on collections from enterprise groups. Hence, it is necessary to be able to produce enterprise group figures from the censuses to achieve comparability with enterprise group figures collected in surveys.

The basic unit for which most data are tabulated is the establishment, defined in general as a unit covering all the operations carried on under the ownership of one enterprise at a single physical location, e.g. an individual factory, shop or mine. A multi-establishment enterprise reports the data for each of its establishments on establishment returns. It also reports summary data for all its establishments on its enterprise return, together with additional data for the enterprise as a whole. An enterprise operating only one establishment supplies a single return (combined establishment-enterprise return). For small businesses, a special short form is used.

Administrative Offices and Ancillary Units

The above special units may be head offices, storage premises, transport garages, laboratories, etc. which serve or administer establishments within the same enterprise and which are located away from them. Such a unit does not supply a separate return but its figures are included in an establishment return (if it serves or administers just the one establishment); or in the enterprise return (if it serves or administers more than one establishment). To enable geographical distributions to be made, separate special unit details are specified on either the establishment or the enterprise return, specifically employment, wages and salaries and capital expenditure.

Manufacturers' Sales Branches

A sales branch located away from the parent manufacturing establishment is treated as an ancillary unit as just described, given one condition: that it does not distribute goods to customers from its own holding of stocks. If a sales branch does distribute from stocks in this way, it is treated as an establishment in its own right and classified as a unit in the wholesale census.

Non-Operating Companies

An enterprise is deliberately defined as an operating legal entity in order to exclude the numerous 'paper companies' which may exist as parents, subsidiaries or associates of operating companies. In general such non-operating companies are attached in the Bureau's lists to individual operating companies in the enterprise group. Holding companies without employees are attached to the principal operating company in the group of companies owned by them.

Ancillary Enterprises; Property-owning Companies

Some holding companies without operations of their own perform administrative services for some or all of their subsidiary companies and have staff of their own for this purpose. These companies receive a special abridged enterprise return as an 'ancillary enterprise'. This abridged return is used also for property-owning companies in an enterprise group which own property used by more than one other enterprise in the group; such companies may be responsible for the capital expenditure of the group.

Establishment of Integrated Register of Businesses*The Integrated Register*

To provide accurate records of the businesses for inclusion in economic censuses and surveys, an *Integrated Register* of businesses had to be set up. In this register, the units at three levels (i.e. establishments, enterprises and enterprise groups) are identified and code-numbered to record the links between the units at the different levels. The register is recorded on magnetic tape and this makes possible automated addressing and despatch of census forms.

Much of the information about the parent-subsidiary relationships of companies in the register was obtained from questionnaires collected from Group Employers operating under the pay-as-you-earn system of income tax deductions. The questionnaires also asked for details of the economic activities at each location of a Group Employer's business. The questionnaire results were used together with pre-1968-69 census lists to build up the original integrated register.

The register is kept up to date by regular checks from many sources. As well as using traditional updating sources (e.g. factory registrations under State law, lists of shops compiled by postmen, etc.), the Bureau collects questionnaires from new Group Employers, and periodically updates information on larger companies by sending copies of the relevant register entries to the companies themselves for amendment.

Changes in the Establishment Concept

Comparability: The adoption of a new establishment concept in each of the economic censuses entails an unavoidable break in the continuity of the census statistics, i.e. 1968-69 and subsequent years' figures are not directly comparable with those for 1967-68 and earlier years. The chief modifications are summarised as follows:

Establishment and Main Activity: Generally the census establishment now is the *whole* of each physical location operated by one enterprise, given that the main activity at the location is within the scope of the census. There is usually one return only for each establishment *classified to the industry of its main activity*. This contrasts with practice in pre-1968-69 censuses when an establishment might receive two or more forms to cover different industries carried on at the one location or be included in two separate censuses. The exceptions to the new 'one return-one establishment' rule are few, the main one relating to cases where the secondary activity at the one location brings gross receipts of \$1m or more; in such cases the secondary activity may have to be reported on a second return appropriate to its industry or to its sector.

Specific Effects of Main Activity Concept: Pre-1968-69, selling and delivery activities of a manufacturing location were excluded from factory statistics; they are now included. Pre-1968-69, factory statistics included minor manufacturing activity carried out by predominantly retail or wholesale establishments; this is now excluded from the factory sector since the establishments

are classified to the wholesale or retail sector. However, continuity of commodity output series is not affected since retailers and wholesalers are asked to report commodity output details if they manufacture as a secondary activity.

Administrative Offices and Ancillary Units: Pre-1968-69, these offices and units, if at locations separate from their associated operating establishment(s), were usually excluded from statistics of the particular census sector; one exception was separately located workshops which were treated as factories in their own right. As previously mentioned, all these offices and units are now included in the return(s) of the establishments or enterprise which they serve. They therefore appear in the census statistics for the predominant industry of the associated establishment or enterprise. To take an example: an ancillary unit (e.g. engineering workshops) serving a chemical plant is now included in statistics for the chemicals industry.

Electricity and Gas Industries the Exception

The single operating location is not suitable as a basis for enterprises engaged in producing or distributing electricity or gas. Taking the Tasmanian example, there are over twenty separate generating stations feeding electric power into an integrated distribution network; production and distribution dissections for any one of these locations would have to be made on a very arbitrary basis. With an integrated network, the basic water storage may be in one municipality, the generating station in another municipality and the points of delivery, through transmission lines, in all 47 municipalities of the Tasmanian 'mainland' (Flinders and King Islands do not receive power from the integrated grid).

Accordingly for electricity and gas industries, a special treatment was devised: the establishment unit for these industries consists of all locations operated by the enterprise in the one State.

Standardisation of the Industrial Classification

Australian Standard Industrial Classification

The Australian Standard Industrial Classification (ASIC) which is an essential tool in the integrated economic censuses and surveys is described in the Bureau publication *Australian Standard Industrial Classification (Preliminary Edition)* 1969, Vol. 1. ASIC defines the industries for which statistics are collected in the censuses and allows the scope of the individual censuses to be marked out without gaps or duplications between them. It also identifies the statistical units (establishments, enterprises, etc.) and lays down standard rules for identifying and coding them to the industries of the classification.

Besides its use in the 1968-69 censuses, ASIC is used or will be used in other economic censuses and surveys, in population censuses and surveys and in other series (national accounts, etc.) derived from the basic statistics. Data classified according to ASIC can be converted to conform essentially with the International Standard Industrial Classification.

ASIC Structure

The structure of ASIC has four levels. The broadest is *Division* corresponding with wide categories such as 'Manufacturing', 'Wholesale and Retail Trade', 'Mining', 'Community Services', etc. The structure is illustrated by the following classification of a factory mainly engaged in making aluminium window frames:

<i>Division</i>	C	Manufacturing
<i>Sub-division</i>	31	Fabricated metal products
<i>Group</i>	311	Fabricated structural metal products
<i>Class</i>	3112	Architectural aluminium products

The fundamental concept of ASIC is that an industry (i.e. an individual *class*, or *group*, etc. in the ASIC) is an entity composed of the establishments, administrative offices and ancillary units which have been classified to it.

Principles of Classification

(i) Each ASIC class is defined in terms of a specified range of economic activities which have been designated as primary to it. (Manufacturing aluminium window frames in the previous example is primary to class 3112.)

(ii) An establishment may, of course, have 'secondary' activities but its classification will depend on the economic activities in which it is mainly engaged (i.e. classification by primary activity).

(iii) An administrative office or ancillary unit is classified according to the predominant industry of the establishments with which it is associated.

(iv) An enterprise is classified according to the predominant industry of its establishments and ancillary units.

Standardisation of Data Concepts for Establishments

Establishment and Enterprise Reconciliation

Many enterprises consist of a single establishment and the single form each receives is a combination type, so there is no problem in reconciling the enterprise return with the establishment return. In the case of multi-establishment enterprises, a reconciliation has to be made.

The key items of data for this reconciliation, and therefore requiring a common conceptual basis, comprise: (a) Turnover; (b) Stocks; (c) Purchases and Selected Expenses; (d) Employment; (e) Salaries and Wages; and (f) Fixed Capital Expenditure. This means that these items, extracted from the accounts of the business *as a whole*, are entered on the enterprise return and must reconcile with the sum of similar entries made on the enterprises' various establishment returns.

The table at the end of this article shows the relationship between establishment and enterprise returns for multi-establishment enterprises.

Value Added

Common to all sectors in the integrated censuses is this definition:

Value added equals turnover plus increase in stocks minus purchases, transfers in and selected expenses.

This measure can then be aggregated for all establishments and all industries covered by the censuses *without duplication*. Value added, broadly speaking, is the surplus from which establishments meet salaries and wages, interest, rent, depreciation and a proportion of any overheads incurred by the parent enterprise; the final residue is then available for appropriation as profits. (The expenses just specified are naturally not included in the 'selected expenses' of the value added definition.)

Turnover

The definition of turnover is as follows:

(a) In Manufacturing and Mining Censuses

(i) sales of goods produced by the establishment; (ii) sales of goods not produced by the establishment; (iii) transfers out of goods to other establishments of the same enterprise; (iv) bounties and subsidies on production; (v) all other operating income but *excluding* revenue from rent and leasing, interest other than hire purchase interest, dividends and sales of fixed tangible assets; and (vi) capital work done for own use or for rental or lease.

(b) In Retail and Wholesale Trade Censuses

- (i) sales of goods (owned by the enterprise); (ii) transfers out of goods to other establishments of the same enterprise (applies only to wholesale); (iii) selling and purchasing commissions received (applies only to wholesale); (iv) all other operating income but *excluding* items specified in (a) (v) above; and (v) goods withdrawn from stock for own use (as fixed tangible assets, or for rental or lease).

Purchases and Selected Expenses

The definition of purchases and selected expenses is as follows:

(a) In Manufacturing and Mining Censuses

- (i) the value of purchases of materials, fuels, electricity and gas, and wrapping and packaging materials is supplemented by the value of transfers in from other establishments of the enterprise; (ii) purchases of goods for resale are included as well as purchases for own use in production; and (iii) selected expenses comprise: repair and maintenance expenses; charges for sub-contract and commission work; outward freight and cartage; motor vehicle running expenses; sales commission payments.

(b) In Retail and Wholesale Trade Censuses

- (i) the value of purchases of goods for resale is widened to include purchases for both wholesale and retail trade, no matter whether the establishment is primarily a retailer or a wholesaler; (ii) the value of purchases also includes purchases of materials for manufacturing to cover cases where the retail or wholesale establishment has this secondary activity; and (iii) selected expenses comprise those specified in (a) (iii) above *plus* purchases of wrapping and packaging materials, and electricity and gas (see item (a) (i) in preceding manufacturing and mining group for the reason for this addition).

Stocks

Stocks refer to the total held by the establishment and may therefore include some held for secondary activities. Thus a manufacturing establishment now includes in its return any stocks of merchant goods held; while a retail establishment includes in its return any stocks of materials held for wholesaling and manufacturing.

Transfer Values

Transfers, both in and out, are confined to transfers of goods; the term is further narrowed to mean transfers between establishments of the same enterprise. Provision exists for recording transfers in all census sectors except Retail Trade and here the instruction requires purchases to be reported inclusive of transfers in, but net of transfers out. Thus, transfers are taken into account in arriving at *value added* since transfers out, as just defined, are a part of *turnover* and transfers in are a part of *purchases and selected expenses*.

There are a number of problems associated with obtaining satisfactory transfer values, due to the variety of ways in which such transactions are recorded by different businesses. The reader is referred to Chapter 31, *Commonwealth Year Book 1970* where the methods of transfer valuation are fully discussed.

Employment, Salaries and Wages

In accordance with the new concept of treating the establishment as a whole, these items become easier to report (e.g. the manufacturer no longer needs to deduct 'non-manufacturing' employees, as in pre-1968-69 censuses). All employees are entered, including those working in administrative offices and ancillary units which serve only the one associated establishment.

Fixed Capital Expenditure

This item was not collected in pre-1968-69 retail censuses and its equivalent in pre-1968-69 manufacturing and mining censuses was 'additions and replacements' necessary for year-to-year reconciliation in the value of fixed assets.

In the integrated economic censuses, the opportunity was taken to collect this item in the detail required for national expenditure estimates. The general basis of the collection is: purchases of new and secondhand assets *less* sales of secondhand assets. (For establishments of multi-establishment enterprises, transfers from other establishments of the enterprise are treated as purchases and transfers to such establishments are treated as sales.)

The dissection of fixed capital expenditure comprises: expenditure on (i) motor vehicles; (ii) land and buildings; and (iii) plant and machinery. A further distinction is made between new assets and secondhand assets.

Main Items on Integrated Census Forms

For multi-establishment enterprises, one common enterprise form is used; in the case of single-establishment enterprises, a variety of forms appropriate to the sector or the industry are used but all are designed to have common enterprise-type items.

The following table shows the main data items on establishment forms and the enterprise form for a multi-establishment enterprise:

Main Items on Integrated Economic Census Returns, 1968-69
(For Multi-Establishment Enterprises)

Establishment Returns		Enterprise Return
Factories, Mines, Electricity, Gas	Retail, Wholesale and Selected Services	
SALES, ETC.— Sales of goods produced by this establishment (ex-tax) Sales of goods not produced by this establishment (ex-tax) Subsidies	Sales of goods owned by enterprise (ex-tax) Commission on sales of goods for other enterprises (wholesale only)	
All other income from outside the enterprise <i>except</i> rents, leasing revenue, interest and dividends	All other income from outside the enterprise, <i>except</i> rents, leasing revenue, interest and dividends	
Capital work on own account	Capital goods withdrawn from stock on own account	
Total Sales, etc.	Total Sales, etc.	Sales, etc.
STOCKS— At 30 June 1968 At 30 June 1969	STOCKS— At 30 June 1968 At 30 June 1969	STOCKS— At 30 June 1968 At 30 June 1969
PURCHASES AND SELECTED EXPENSES— Purchases of materials for manufacturing Purchases of goods for resale Purchases of fuel	PURCHASES AND SELECTED EXPENSES— Purchases of goods for resale Purchases of materials for manufacturing	

Main Items on Integrated Economic Census Returns, 1968-69
(For Multi-Establishment Enterprises)—continued

Establishment Returns		Enterprise Return
Factories, Mines, Electricity, Gas	Retail, Wholesale and Selected Services	
PURCHASES AND SELECTED EXPENSES—continued	PURCHASES AND SELECTED EXPENSES—continued	
Repair and maintenance expenses	Purchases of wrapping and packaging materials, and electricity and gas; repair and maintenance expenses	
Charges for sub-contract and commission work	Charges for sub-contract and commission work	
Outward freight and cartage	Outward freight and cartage	
Motor vehicle running expenses	Motor vehicle running expenses	
Sales commission payments	Sales commission payments	
Total Purchases, etc.	Total Purchases, etc.	Purchases, etc.
TRANSFERS—	TRANSFERS—	
Transfers of goods out (to other establishments of same enterprise)	Transfers of goods out (to other establishments of the same enterprise)	
Transfers of goods in (from other establishments of the same enterprise)	Transfers of goods in (from other establishments of the same enterprise)	
Rent and leasing charges	Rent and leasing charges	Rent and leasing charges
Depreciation	Depreciation	Depreciation
Wages and salaries	Wages and salaries	Wages and salaries
Sales tax	Sales tax	Sales tax
Fixed capital expenditure	Fixed capital expenditure	Fixed capital expenditure
Employment	Employment	Employment
		Land tax, rates and payroll tax
		Interest payments
		Royalty payments
		Employer contributions to superannuation schemes
		All other expenses (a)
		Rent and leasing revenue
		Interest receipts
		Revenue from royalties
		Value of fixed tangible assets

(a) A single total, including travelling expenses, insurance premiums, accounting and legal costs, postage and telephone charges, office supplies, advertising, bank charges and the like, but not 'provisions'.

Spreading of Enterprise Overheads and Earnings

It will be observed that the enterprise return contains a number of items (mainly overhead expenses and earnings that would be recorded only at enterprise level) which are not collected on establishment returns. However, for certain statistical purposes, it may be desirable to give geographical distributions and, for this purpose, the enterprise level is not suitable (e.g. a multi-establishment enterprise may have establishments in more than one State, or in more than one local government area). It is nevertheless possible to make such distributions on an establishment basis by using a set of standard conventions to spread the enterprise overheads and earnings over the various establishments of the enterprise. Which overheads or earnings are to be spread in this manner will depend on the particular statistical measure for which a distribution is required.

Appendix B

CHRONOLOGY AND LATER INFORMATION

CHRONOLOGY: THE YEAR 1971

Record to 19 November 1971

N.S.W. Yacht *Pacha* winner of Sydney-Hobart race. National Wage Case increase of six per cent granted. Over-the-counter sales of bromides to be banned in Tasmania in an effort to counter drug addiction. Tasmanian yacht, *Sobraon*, sailed by eighteen-year old Andrew Payne, wins Heron class Australian yachting championships. Woolworths and Coles reduce food items by five to 20 per cent. Hobart recorded its hottest day (97°F) since Black Tuesday (7 February 1967). Somerset engineering firm develops underground drilling rig, the first of its type made in Australia. All cars registered in Tasmania, after 1 January 1971 to have seat belts fitted to rear seats; removal of seat belts from cars registered on or after 1 January 1971 made an offence. Prince and Princess Mikasa of Japan arrive in Tasmania on a one-day visit. Tasmanian butter and cheese exported by container shipment for the first time. Board of Inquiry into Tasmanian apple and pear industry calls for major reorganisation of marketing. Consumer Protection Council to investigate Hobart's high supermarket and hotel prices compared with other Australian capitals. Contracts worth \$250,000 let for Education Department building projects, including first stage of Springfield Garden Infant School (\$122,300), and extensions to New Norfolk High School (\$96,989). \$400,000 computer installed at Cadbury Schweppes Australia Limited's Claremont plant. Mr R. R. Neville officially takes over as Agent-General for Tasmania in London following the retirement of Sir Alfred White. University of Tasmania fees increased by up to 14.3 per cent. World championship International Dragon class yachting titles held in Hobart. Motorists who have held a licence for less than twelve months completely banned from drinking and driving. Torrential rains caused flooding; many roads in Southern and South-East Tasmania impassable. Power generating ship *George H. Evans* (used by H.E.C. to generate electricity during the 1967 power shortage) sold for scrap to Chinese firm for \$250,000. A.P.M. Ltd to move into mineral exploration in Tasmania. First African Bishop of Tanganyika (Bishop Musa Kahurananga) arrives in Tasmania for seven-day visit. Twenty-three Australian swimming records established in national titles held in Hobart. Tasmanian teachers granted pay rises of fourteen per cent. Centenary celebrations for Tasmanian Government Railways commence and include running of vintage train to re-enact the first train journey from Launceston to Deloraine. Devonport public meeting votes not to continue with Council appeal to High Court against S. P. Holman and Sons Pty Ltd. Council wanted to prevent the company establishing a gut-scraping plant. Latrobe council to record essential evidence and information photographically. University of Tasmania to limit future student intake because of shortage of funds. Areas of Hobart subjected to severe flash flooding; Hobart Regatta washed out, central city block flooded. Tasmania to participate in Commonwealth's \$100m rural reconstruction scheme. Tasmanian doctors raise fees by up to 17 per cent. Hail badly damages Huon Valley apple crop. Devonport Council to oppose State Government over

fluoridation issue after Council referendum of ratepayers resulted in seven to one 'No' vote. Stock Exchange trading in two Tasmanian mining companies—Aberfoyle and Cleveland Tin—suspended following crash of Mineral Securities Australia Ltd with debts reported to be in the vicinity of \$40m. Rigorous milk standards introduced in Tasmania to ensure maintenance of quality of raw and pasteurised milk. Launceston and North West coast women's hairdressing salon employees protest against a 27 per cent rise in margins fearing the wage rise would result in widespread retrenchment. Consumers Protection Council asked to investigate rise in doctors fees. Parliamentary Liberal Party agrees in principle to lower drinking age to eighteen. Federal Government orders cuts in Government spending totalling \$73m as measure against inflation. Launceston supermarket fined \$200 for selling cooking margarine containing artificial colouring and flavouring contrary to prohibiting legislation. Reward of \$1,000 offered for information leading to conviction of school firebug in Hobart. John Denholm, leading Tasmanian middle distance runner, runs four minute one second mile (the fastest ever recorded in Tasmania and the fastest in Australia for the 1971 season). England wins Ashes after beating Australia two-nil in cricket test series. Cyclist Danny Clark of George Town broke Australian 5,000 metres pursuit record by 2.1 seconds riding the distance in four minutes 55.9 seconds. Launceston's new public library building officially opened. First prosecution launched in Tasmania under ten-year old Commonwealth Marriage Act when a man was charged with bigamy. Fifteen C.M.F. members seriously injured when an Army truck overturned at Buckland. Fluoridation equipment installation completed at Burnie (the first North-West Coast town to have a fluoridated water supply). State Government agrees to pay all costs of freeways and expressways; local government to save considerable sums previously spent as their share of the cost. Committee formed to enquire into drownings and advise Government on how best to reduce them. Coin-in-slot gas operated barbecues installed at selected roadside rest areas. Multi-age class groups introduced in Scottsdale High School, initially for home room purposes but eventually all subjects are planned to be taught on same basis. Port of Launceston Authority current port improvement scheme completed at a cost of \$4m. Parliamentary Select Committee attacks Burnie expressway plan claiming it was routed through Burnie purely for commercial interests. Southern apple crop suffers severe hail damage. Supreme Court Judges to take down evidence by hand following the abandonment of court reporting system. Details of \$114m Pieman River H.E.C. scheme (Tasmania's largest hydro scheme) announced. Former Foreign Affairs Minister (Mr William McMahon) becomes Prime Minister succeeding Mr John Gorton. The heaviest blue marlin taken in Australian waters landed at Nubeena on Tasman Peninsula; weight 1,230 lb, length 12 ft 10 in. A.P.P.M. Ltd Wesley Vale paper plant valued at \$25m opened. Completion of \$9m expansion programme lifts Comalco (Bell Bay) plant production to 94,000 tons per annum, making the plant Australia's largest aluminium smelter. Education Department to apply regular cost of living adjustment to student teachers' allowances. John Holland Constructions Pty Ltd awarded Launceston Gorge Bridge contract; two lanes of bridge to be completed within eighteen months. Follow-up re-examination of the 1968 Asthma Foundation of Tasmania survey of school children commences. Consumers Protection Council report on apparent disparities between Tasmania and Melbourne grocery prices completed. State Government grants service payments to employees; the move effects 3,000 tradesmen and is to cost \$197,000 for the rest of 1970-71 financial year (three months). Government to ban the sale of 'double-banger' firecrackers. Ludbrooks Ltd strikes alluvial tin deposit of between 50 and 100 million cubic yards potential at Cox Bight in south-western Tasmania. Government to introduce advanced

driving certificates which will entitle holders to insurance premium concessions. Commonwealth Industrial Gases Ltd commences its Launceston expansion by letting a contract worth \$180,000 for buildings and roadworks. Melbourne man, David Bower became first man to row across Bass Strait, leaving Devonport and arriving in Victoria after eleven days. Work starts on a new Currie district hospital, part of a project which together with work at the Grassy Annexe will cost \$581,000. State's first fully co-ordinated cargo handling system company formed; company to carry cargo on a concept of straight through from point of origin to destination. Australia's oldest telephone trunk exchange, New Norfolk, closed. Minimum security gaol to be built in northern Tasmania at a cost of \$250,000; the main feature being that 20 trusted inmates will work in local industry returning to gaol each night. Extensions to the University of Tasmania's chemistry and administration buildings costing \$910,700 recommended by the Parliamentary Public Works Committee. Miscellaneous Workers Union attempts to have A.C.T.U.-Bourkes type store established in Tasmania. Gamblers Anonymous reports 10,000 compulsive gamblers in Tasmania. Elections held to replace Kingborough Commission with elected Council for the first time since 1960; St Leonards Administrator replaced by a Council. Animals and Birds Protection Board reveals illegal trafficking in native wildlife; illicit export and possession of wildlife to bring a penalty of \$500 under new regulations. Thirty-two sperm whales, some up to 60 feet long, commit mass suicide on a beach near Stanley. Young invalid pensioner charged with arson in connection with Eastern Shore School fires which caused damage estimated at about \$500,000. Nation-wide shipping strike over dismissal of A.N.L. stewards commences. After more than 25 years the Hobart Salvation Army Girls Hostel to close down. Reports of large scale 'cattle-duffing' on North West coast near Devonport; thieves reported to be using a tranquilliser gun to quieten stolen stock. A Government-appointed Board to be set up to hear appeals against council and local authority decisions on zoning and town planning. Large scale retrenchments in building industry in Devonport in what is considered to be the town's worst building slump in 20 years. A.N.M. Ltd plans expansion programme costing \$6.2m at Boyer to increase newsprint from 165,000 tons to 200,000 tons per year. State Government asks the Commonwealth Government to have Trades Practices Commission investigate bread price-fixing in Tasmania. Sealing of the final eighteen-mile section of Bass Highway linking Marrawah with Launceston completed and the section officially opened; work on the highway first commenced in 1933. Public address system introduced experimentally on Tasmanian police cars (which do not carry sirens). N.W.F.U. and T.F.L. back move for national football pool competition. Tasmanian Farmers Federation opens a discount co-operative for members. Proposal for a second Matriculation College in Launceston to cost nearly \$1.5m approved by the Parliamentary Public Works Committee; work to commence early in 1972. Shipping strike ends; Tasmania to be given special consideration by A.C.T.U. in any further shipping strikes. Devonport Council votes in favour of preventing operation of fluoridation plant by Government employees. Three bulk-cement carrying aluminium alloy wagons, (each costing \$20,000) built at the Launceston railway workshop. Sea Fisheries Division use electronic detection equipment to locate barracouta in an attempt to boost catches. A \$286,000 supermarket opened in Devonport shopping centre. Department of Labour and National Service report that Tasmania had the lowest number of dentists per head of population at the 1966 Census. Five-State survey shows fewer Tasmanian doctors charge common fee or less; Victoria the only State not surveyed. Six people die in one of the worst-ever road accidents in Tasmania. The first six sections of the old Hobart Bridge sunk in 20 fathoms of water off Betsy Island. Towns of Oatlands and Perth celebrate their 150th

anniversaries. Bomb hoaxers obtain \$500,000 from Qantas. For the second time in eight years South Burnie railway station razed by fire. Comprehensive hospital insurance based on all inclusive fees introduced; under this scheme all hospital 'extra' charges are covered. Highest accident damages in Tasmania's history (\$62,049) awarded to a girl injured in 1967. State Education Department introduces Social Science classroom library kits for use by Grade Four children. Each kit contains 30 illustrated books about 19th Century Tasmania and a collection of facsimile historical documents. Victoria Bridge officially opened at Devonport. Mrs Geraldine Brodrick of Canberra becomes the first woman known to have given birth to nonotuplets. Earth tremor measuring four on the Richter scale recorded in Burnie and on the North West Coast—the strongest tremor recorded in Tasmania for thirteen years. A Tasmanian woman (Mrs F. Miles) elected National president of the Country Women's Association. Federal Government promises another \$1.5m towards Bell Bay rail link making a total contribution of \$5m. \$270,000 expansion programme undertaken by Table Cape Butter Co as part of plans to secure a 1,000 ton cheese export contract with Japan. Seven prisoners escape from Risdon Gaol. Price cutting petrol company (I.O.C.) to set up stations in Tasmania. Brighton municipality celebrates 150th anniversary. Police investigate the theft of about 425 sheep valued at \$12,000 from properties south of Swansea. Victoria, Queensland, A.C.T. and N.S.W. join Tasmania with daylight saving. Rosny Children's Choir performs successfully during International Eisteddfod in Llangollen, Wales. Work on \$1m shopping complex begins at Claremont. House of Assembly rejects select committee recommendation to shelve Launceston Casino proposal for five years. Mystery blast wrecks six Launceston stores—damage estimated at more than \$500,000 dollars; twelve people hurt but none seriously. Tasmanian basketball team defeats touring United States team (87-66). Hobart Convention Bureau formed; plans to develop Hobart as a national and international convention city. Magistrate ruled that it was invalid for policemen to operate breathalysers but this ruling was later set aside by a Supreme Court Judge. Metropolitan Transport Trust fares increased by one-third. Launceston General Hospital Board General Superintendent (Dr C. C. Petrovsky) and Lady Superintendent of Nursing (Matron A. B. Abbott) offer to resign to end L.G.H. public enquiry which was started after 22 doctors called for a top-level enquiry into the hospital administration. Retail price maintenance banned by legislation throughout the Commonwealth. Personal income tax levy increased by 2.5 per cent in Federal Budget. Bandits rob Longford A.N.Z. bank of \$8,000. Federal Government announces that Australian forces to be withdrawn from Vietnam by Christmas; National Service to be cut from two years to eighteen months. Fifteen children at Smithton Primary School overcome by carbon monoxide gas which leaked from a four-gallon drum of linseed oil stored under the school. Circular Head Marine Board accepts \$500,000 tender for ferry terminal; terminal to be commenced immediately and to be part of triangular shipping operations between Stanley, King Island and Melbourne. A 900-ton ship is being constructed for the run. Roman Catholic Archbishop threatens to close some church schools because of inadequate State aid. Tasmania's Lindy Goggin wins Australian women's golf title; first Tasmanian victor since 1913. Drivers appearing in court asked to complete psychological test questionnaire in an attempt to analyse drivers' attitudes towards road usage. Pak Poy report of the Tasmanian transport system recommends: central port for non-bulk cargo; a large decrease in State railway personnel; and cut in size and number of railway buildings. Tasmanian prison remissions increased from one-quarter to one-third of sentence. High Court rules Federal Restrictive Trade Practices Act is invalid. Census of Population—Tasmania, 389,874 persons (preliminary).

LATER INFORMATION

Chapter 3

Dissolution of the Liberal-Centre Party Coalition Government

The Liberal-Centre Party coalition, after a life of two years and ten months, was dissolved on 14 March 1972. Formal dissolution of the coalition occurred when: (i) the Premier, Mr Bethune, advised the Governor to grant a dissolution of the House of Assembly; and (ii) Mr Lyons, the Deputy Premier and only representative of the Centre Party in the Parliament, tendered his resignation from Cabinet to the Governor.

In the evening the House of Assembly met and after dealing with preliminary business heard a statement from the Deputy Premier, who once again occupied the cross-benches in the House of Assembly. This was followed by a brief statement by the Premier who then requested that the House of Assembly be adjourned. The Opposition, after being assured by the Premier that he had advised the Governor to dissolve the House, agreed to the adjournment. The following day (15 March) the Governor issued a proclamation dissolving the House of Assembly.

Chapter 5

Population Census, 1971—Preliminary Results

Population of Tasmania: Preliminary results of the 1971 Population Census indicated that the State population was 389,874 persons and suggest that the rate of growth since 30 June 1966 has been somewhat less than that implied by the estimates 1967-1970 appearing earlier in Chapter 5. Revised 30 June estimates bridging the intercensal period 1966-1971 are as follows: 1966 (Census)—371,436 persons; 1967—375,136; 1968—379,434; 1969—384,569; 1970—387,289; 1971 (Census)—389,874.

Population Distribution: The following table, based on these preliminary results, shows a dissection of each local government area into urban and rural components at 30 June 1971.

Urban centres for census purposes are areas with permanent population clusters of 1,000 or more persons, subject to two exceptions: (i) construction sites, even containing 1,000 or more persons, are not classified as urban centres; (ii) the 1,000-person rule is replaced by a dwelling-density formula in the case of holiday resorts.

If the centre's population is 25,000 or greater, the urban boundary is defined by including all contiguous collector's districts with a population density of 500 persons per square mile, subject to special rules covering non-residential land use, etc. If the population is under 25,000, the boundary is delimited by inspection of aerial photos, by field inspection, etc.

**Population in Local Government Areas Classified as Urban and Rural
Census of 30 June 1971 (Preliminary Figures)**

Local Government Area (Statistical Division in Bold Type)	Total	Rural	Urban Hobart	Urban Launceston	Other Urban (a)
Hobart (H)	52,425	683	51,742	..	..
Glenorchy (H)	42,620	985	41,635	..	..
Clarence (H)	37,013	2,109	33,583	..	1,321
Brighton (SE) (H)	2,329	2,329	..	..	..
Glamorgan (SE)	1,118	1,118	..	..	..
Green Ponds (SE)	871	871	..	..	..
Richmond (SE)	1,568	1,568	..	..	..
Sorell (SE) (H)	3,609	1,599	..	..	2,010
Spring Bay (SE)	1,412	1,412	..	..	..
Bruny (S)	311	311	..	..	..
Esperance (S)	3,526	3,526	..	..	..
Huon (S)	4,752	4,752	..	..	..
Kingborough (S) (H)	10,767	4,246	2,848	..	3,673
New Norfolk (S) (H)	10,602	3,763	..	..	6,839
Port Cygnet (S)	2,066	2,066	..	..	..
Tasman (S)	1,044	1,044	..	..	..
Hobart	153,024	9,373	129,808	..	13,843
South Eastern	7,024	7,024	..	..	..
Southern	15,985	15,985	..	..	..
Launceston	35,001	..	..	35,001	..
North Central	35,001	..	..	35,001	..
Burnie	19,943	2,621	..	..	17,322
Circular Head	7,958	4,755	..	..	3,203
Deloraine	4,805	2,989	..	..	1,816
Devonport	19,761	1,611	..	..	18,150
Kentish	5,310	5,310	..	..	..
King Island	2,801	2,801	..	..	..
Latrobe	5,096	2,645	..	..	2,451
Penguin	4,777	2,490	..	..	2,287
Ulverstone	11,047	3,042	..	..	8,005
Wynyard	10,597	3,818	..	..	6,779
North Western	92,095	32,082	..	..	60,013
Beaconsfield	10,920	5,309	..	4,742	869
Fingal	3,438	3,438	..	..	..
Flinders	967	967	..	..	..
George Town	6,027	1,190	..	..	4,837
Lilydale	8,301	2,229	..	6,072	..
Portland	1,495	1,495	..	..	..
Ringarooma	2,461	2,461	..	..	..
Scottsdale	3,598	1,798	..	..	1,800
North Eastern	37,207	18,887	..	10,814	7,506
Evandale	1,462	1,403	..	59	..
Longford	5,132	2,312	..	..	2,820
St Leonards	16,196	909	..	15,287	..
Westbury	4,860	3,840	..	1,020	..
North Midland	27,650	8,464	..	16,366	2,820
Bothwell	815	815	..	..	..
Campbell Town	1,640	1,640	..	..	..
Hamilton	4,033	4,033	..	..	..
Oatlands	2,131	2,131	..	..	..
Ross	550	550	..	..	..
Midland	9,169	9,169	..	..	..

**Population in Local Government Areas Classified as Urban and Rural
Census of 30 June 1971 (Preliminary Figures)—continued**

Local Government Area (Statistical Division in Bold Type)	Total	Rural	Urban Hobart	Urban Launceston	Other Urban (a)
Gormanston	465	465	..	..	..
Queenstown	5,081	97	..	..	4,984
Strahan	442	442	..	..	..
Waratah	1,935	767	..	..	1,168
Zeehan	4,373	516	..	..	3,857
Western	12,296	2,287	..	..	10,009
Migratory	423	..	..	..	..
Total Tasmania	389,874	103,271	129,808	62,181	94,191

(a) Details of 'Other Urban' localities and of Urban Hobart and Urban Launceston are given in the next section.

Details of Urban Localities: In the previous table, each local government area has been dissected to show the distribution of its population, the final column reading 'Other Urban'. The next table gives details of the localities classified as urban (but excludes Urban Hobart and Urban Launceston).

Population in Localities Classified as Urban (Excluding Urban Hobart and Urban Launceston), Census of 30 June 1971 (Preliminary Figures)

Locality Classed as Urban	Local Government Area (a)	Persons in Urban Locality	Locality Classed as Urban	Local Government Area (a)	Persons in Urban Locality
Burnie-Somerset	Burnie-W ^y ard	20,088	Rosebery ..	Zeehan ..	2,381
Devonport ..	Devonport ..	18,150	Penguin ..	Penguin ..	2,287
Ulverstone ..	Ulverstone ..	8,005	Sorell (b) ..	Sorell ..	2,010
New Norfolk ..	New Norfolk	6,839	Deloraine ..	Deloraine ..	1,816
Queenstown ..	Queenstown	4,984	Scottsdale ..	Scottsdale ..	1,800
George Town ..	George Town	4,837	Longford ..	Longford ..	1,712
Wynyard ..	Wynyard ..	4,013	Zeehan ..	Zeehan ..	1,476
Kingston ..	Kingborough	3,673	Lauderdale ..	Clarence ..	1,321
Smithton ..	Circular Head	3,203	Savage River	Waratah ..	1,168
Latrobe ..	Latrobe ..	2,451	Perth ..	Longford ..	1,108

(a) See previous table for total population of local government area.

(b) Includes Midway Point.

The next table gives full details of Urban Hobart and the Hobart Statistical Division:

**Population of the Hobart Statistical Division, Census of 30 June 1971
(Preliminary Figures)**

Local Government Area	Hobart Division	Rural	Urban Hobart	Other Urban	Locality Classified as Urban
Hobart	52,425	683	51,742	..	..
Glenorchy	42,620	985	41,635	..	..
Clarence	37,013	2,109	33,583	1,321	Lauderdale
Brighton (Part)	1,333	1,333	..	..	..
Sorell (Part)	2,550	540	..	2,010	Sorell & Mid- way Point
Kingborough (Part) ..	9,740	3,219	2,848	3,673	Kingston
New Norfolk (Part) ..	7,343	504	..	6,839	New Norfolk
Total Hobart Div. ..	153,024	9,373	129,808	13,843	..

An analysis of the local government areas enclosing Launceston is shown in the following table:

**Population of Urban Launceston and Surrounding Local Government Areas,
Census of 30 June 1971 (Preliminary Figures)**

Local Government Area (a)	Total	Rural	Urban Launceston	Other Urban	Locality Classified as Urban
Launceston (N. Central) ..	35,001	..	35,001	..	..
Beaconsfield (N.E.) ..	10,920	5,309	4,742	(b) 869	Beauty Point
Evandale (N. Mid.) ..	1,462	1,403	59	..	..
Lilydale (N.E.) ..	8,301	2,229	6,072	..	..
St Leonards (N. Mid.) ..	16,196	909	15,287	..	..
Westbury (N. Mid.) ..	4,860	3,840	1,020	..	..
Total (c)	76,740	13,690	62,181	869	..

(a) Statistical Division shown in brackets.

(b) Defined as urban under the special rules relating to resort areas.

(c) Total distribution in North Central, North Eastern and North Midland Statistical Divisions.

Chapter 7

Woodchips

A.P.P.M. Ltd: During 1971 A.P.P.M. Ltd successfully negotiated a new woodchips export contract with Japanese interests. The new contract will mean: (i) an annual increase of 300,000 tons (to 900,000 tons) of woodchips exports to Japan; (ii) a requirement for an additional 20 rail log-wagons for timber cartage; and (iii) additional employment in northern Tasmania for plant workers and timber hauliers.

The contract is for $5\frac{1}{2}$ years with options for extensions.

Northern Woodchips Pty Ltd: H. C. Sleight Ltd and the Australian Industrial Development Corporation became major shareholders in Northern Woodchips Pty Ltd following the capital restructuring of the original company. The restructure followed financial difficulties which threatened the project and caused cessation of work on the company's Long Reach plant site.

A.I.D.C. provided loan funds and equity capital and H. C. Sleight Ltd provided bridging finance for the project.

Chapter 14

Off-Course Totalisator Betting: Early in 1972 the State Government ruled against the introduction in Tasmania of an off-course totalisator betting system (T.A.B.). The decision climaxed several months of lobbying on the part of supporters and opponents of T.A.B.

Instead of introducing the system the Government decided to substantially increase taxation on bookmakers' transactions. Turnover tax was raised from $2\frac{1}{2}$ per cent to $3\frac{1}{2}$ per cent and stamp duty on betting tickets was increased from two cents to three cents.

The new rates will become effective from 1 July 1972 and are expected to yield an additional \$594,000 in revenue in 1972-73. Of this \$418,000 will be paid to the State and \$176,000 to racing clubs. Special grants to racing clubs will also be increased so that the clubs will benefit by at least an additional \$200,000 in 1972-73.

PUBLICATION OF TASMANIAN STATISTICS

HOW TO OBTAIN CURRENT PUBLICATIONS

General

The Tasmanian Office of the Commonwealth Bureau of Census and Statistics is located at *Kirksway House, corner of Kirksway Place and Montpelier Retreat, Hobart*. Requests for statistical publications can be made by calling at this address; by phoning, *Hobart 202122*; or by writing to the *Deputy Commonwealth Statistician, G.P.O. Box 66A, Hobart, 7001*.

Service to the public is not restricted to the distribution of publications. If no publication adequately covers the subject matter of the enquiry, then a special extraction of the data required may be undertaken if they are available from the basic records held in the office.

Historical

Before the appointment of the first Government Statistician in Tasmania in 1867 statistics had been published in the official 'Blue Books' compiled by the Colonial Secretary during the period 1822-1855, and in volumes entitled *Statistics of Tasmania* after self-government was granted.

By the *Commonwealth and State Statistical Agreement Act 1924*, the Tasmanian Parliament ratified an agreement for the establishment of an office in Tasmania of the Commonwealth Bureau of Census and Statistics, such office to meet the statistical needs of the State Government; provision was made for the Deputy Commonwealth Statistician, a Commonwealth officer, to hold at the discretion of the State Government, the title of (State) Government Statistician. The first officer appointed in this way was L. F. Giblin, M.C., D.S.O., who had previously been the State Government Statistician. (It was not till the late 1950s that similar arrangements were made in the other Australian States.)

Statistics from 1804

In the Archives Office of Tasmania, the following series are available:

- (i) Official 'Blue Books' for period 1822-1855.
- (ii) *Statistical Account of Van Diemen's Land or Tasmania, 1804 to 1854* compiled by Hugh M. Hull (Office of the Colonial Secretary).
- (iii) *Statistics of Tasmania*—annual publications from 1856 to 1922-23.
- (iv) *Statistics of the State of Tasmania*—annual publications commencing 1923-24 and continuing to 1967-68. (Copies of these volumes are held at the University Library, the State Library

in Hobart, the Public Library in Launceston and the Tasmanian Office of the Commonwealth Bureau of Census and Statistics.) Although the bound volume entitled Statistics of the State of Tasmania has been discontinued as from the 1967-68 issue, the component parts are still published as separate bulletins (these are listed in the table of 'Printed Publications' in the following section).

Copies of publications listed from (ii) to (iv) inclusive, are available for inspection at the Tasmanian Office of the Bureau.

Current Publications of the Tasmanian Office

The Tasmanian Office of the Commonwealth Bureau of Census and Statistics is engaged in a continuous publication programme, the statistics appearing in either printed or mimeographed form.

In general, the mimeographed publications (which are obtainable free of charge) are issued with a view to disseminating statistical information as soon as possible after it becomes available. Printed publications contain information in very much greater detail but, because of the time consuming nature of manuscript preparation and the printing process, may be issued a year later than the period to which they refer. (The printed *Monthly Summary of Statistics* is an exception and the 'lag' is no more than about two months.)

Printed Publications

The following table sets out details of all printed publications issued by the Tasmanian Office:

Printed Publications Issued by the Tasmanian Office

Title	Frequency	For Issue in 1972	Price	
			Excluding Postage (\$)	Including Postage (\$)
Tasmanian Year Book	Annual	1972	2.00	2.61
Monthly Summary of Statistics	Monthly	(a)	0.15	0.22
Pocket Year Book of Tasmania	Annual	1972	0.15	0.27
Demography	Annual	1970	0.60	0.78
Trade and Shipping	Annual	1969-70	0.40	0.58
Labour, Wages and Prices	Annual	1970-71	0.60	0.78
Primary Industries	Annual	1969-70	0.70	0.88
Building Industry	Annual	1970-71	0.20	0.32
Finance	Annual	1969-70	0.60	0.78
Social	Annual	1970	0.20	0.38
Statistical Summary	Irregular	1962-63	0.40	0.52

(a) Published one or two months after the most recent month for which figures are available.

Mimeographed Publications

The next table gives details of all mimeographs produced by the Tasmanian Office:

**Mimeographed Publications Issued by the Tasmanian Office
(Free of Charge)**

Title of Publication	Frequency
Bee Farming Statistics	Annual
Building and Co-operative Societies, Pension and Superannuation Schemes ..	Annual
Building Approvals	Monthly
Building Construction Statistics	Quarterly
Compendium of Municipal Statistics	Irregular
Crop Statistics	Annual
Dairy Industry Statistics	Annual
Farm Population, Employment, Machinery, Irrigation and Fertiliser Used ..	Annual
Fire, Marine and General Insurance	Annual
Fruit Statistics	Annual
Hop Production	Annual
Hospital Morbidity Statistics	Annual
Index of Tasmanian Towns	Irregular
Industrial Accident Statistics	Annual
Industrial Disputes	Annual
Livestock Statistics	Annual
Livestock Statistics (preliminary)	Annual
Local Government Finance	Annual
Meat Production	Annual
Motor Vehicle Registrations	Monthly
Population and Vital Statistics	Quarterly
Population in Local Government Areas	Annual
Potato Statistics	Annual
Poultry Statistics	Monthly
Poultry Statistics	Annual
Productive Activity—Miscellaneous Indicators	Monthly
Retail Sales of Goods	Quarterly
Road Traffic Accidents	Quarterly
Road Traffic Accidents	Annual
Sawmilling, Woodchipping, etc. Statistics	Monthly
Tractors on Rural Holdings	Triennial
Trade (overseas)	Annual
Trade (overseas and interstate) by Sea and Air	Annual
Value of Primary Production	Annual
Wholesale Sales and Stocks of Wine and Spirits; Consumption of Alcoholic Liquor	Annual
Wool Production Statistics	Annual

TASMANIAN STATISTICS IN CENTRAL OFFICE PUBLICATIONS

General

Although publications of the Tasmanian Office of the Bureau of Census and Statistics make available statistics on many aspects of the State, there are some fields in which additional or more frequent information is available in publications of the Central Office.

How to Obtain Central Office Publications

Central Office printed publications may be *bought* direct from the Government Printer, Canberra and from the Tasmanian Office of the Bureau of Census and Statistics; they may also be ordered from leading booksellers in the principal centres. A standing order may be placed with the Australian Government Publishing Service, Canberra, with whom a credit account may be arranged.

In addition to printed publications for which a charge is made, there are other Central Office publications (mimeographed, etc.) which may be obtained free of charge from the Commonwealth Statistician, Canberra.

Subject Matter of Central Office Publications

The fields of statistical enquiry covered in Central Office publications are very wide and the best way to obtain a guide to the material available is to write to: *The Commonwealth Statistician, Canberra* and ask for *Publications of the Commonwealth Bureau of Census and Statistics*. Copies of this guide are also available at the Tasmanian Office of the Bureau. This free comprehensive guide lists the publications of the Central Office and of the State Offices; in addition, it contains a subject index.

Readers with interest in a particular field are invited to call at, or write to, the Tasmanian Office which is in a position to give advice on what publications are available.

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